S/M Code No.88-053 DATE OF ISSUE 9/1988-T

AIWA®

XC-007

SERVICE MANUAL

COMPACT DISC PLAYER

• BASIC CD MECHANISM : KSL-510ABM • TYPE. H, C, E, K

SPECIFICATIONS

Type:	Compact disc digital audio system
Disc:	Compact disc
Scanning method:	Non contact optical scanner (semiconductor laser application)
Laser:	Semiconductor laser (λ=780 nm)
Rotation speed:	Approx. 500 rpm—200 rpm (CLV)
Error correction:	Cross Interleave, Read Solomon Code
No. of channels:	2 channels
D-A conversion:	16-bit linear
Frequency response:	4 Hz—20 kHz±0.3 dB
Harmonic distortion:	0.003% (1kHz) (EIAJ)
Dynamic range:	98 dB
Channel separation:	100 dB (1 kHz)
S/N Ratio:	115 dB (A) (EIAJ)
Wow/Flutter:	Unmeasurable

Disc specifications

Playing time:	Approx. 60 minutes (max. 74 minutes)
Dimensions:	Diameter 120 mm, Thickness 1.2 mm
Track pitch:	1.6 μm
Sampling frequency:	44.1 kHz

Power and Miscellaneous

Power supply:

- H AC 120V/220V/240V, 50/60 Hz
- E AC 220V, 50/60 Hz
- K AC 240V, 50/60 Hz
- C AC 120V, 60 Hz

Power consumption:	22W
Dimensions:	466(W)×126(H)×365(D)mm
Weight:	13 kg

• Design and specifications are subject to change without notice.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

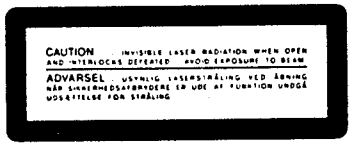
"Varoitus'. Laite sisältää laserdiodin, joka lahettää nakymätonta silmille vaarallista lasersäteilyä."

LASER WARNING LABELS

1. Protective Housing Label
   WARNING Label 1 . . . . . (E,K,Y model)

2. WARNING Label 4 . . . . . (E,K,Y model)

3. WARNING Label 3 . . . . . (E,K,Y model)



■ACCESSORIES／PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
	1	★E4-745-504-010	INSTRUCTION BOOKLET H	*	1
	2	★84-733-207-010	SCREW,DRIVER		1
	3	★E7-032-845-010	SIEMENS PLUG (H ONLY)		1
	4	★E6-247-813-010	RC-C007YB		1

DISASSEMBLY INSTRUCTIONS

A) Removing the Mechanism

1) Remove the 4 screws and 5 connectors (a through e), then remove the mechanism while moving in the direction indicated by the arrow. (See Figure-1)

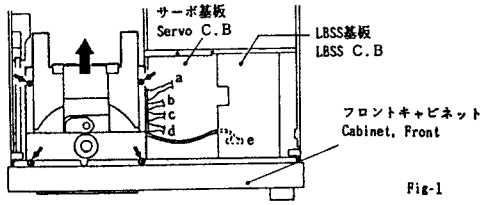


Fig-1

B) Removing the Tray, Replacing the ML Belt, and Inserting the Tray

1. Removing the Chuck Chassis

1) Remove the 2 screws, then remove it upward so that the chuck chassis is open. (See Figure-2)

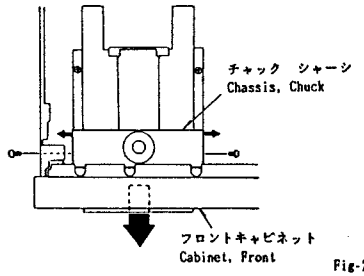


Fig-2

2. Removing the Tray

- For automatic operation
  1) Turn on the power with the chuck chassis removed.
  2) Press the OPEN/CLOSE key, eject the tray, and pull out it toward you.(See Figure-2)
- For manual operation
  1) When the control cam in is turned the direction indicated by arrow ①, mechanism chassis SPD is lowered and the tray is moved toward you.
  2) Pull out the tray in the direction indicated by arrow ②. (See Figure-3)

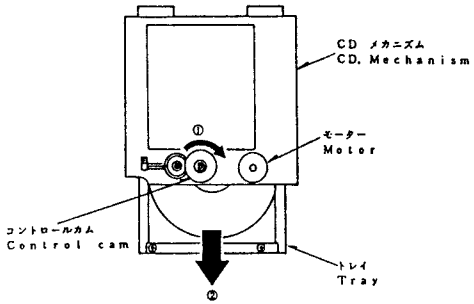


Fig-3

3. Removing the ML Belt

1) Remove one screw with the tray removed, then remove the gear cover. (See Figure-4)
2) Replace the ML belt.

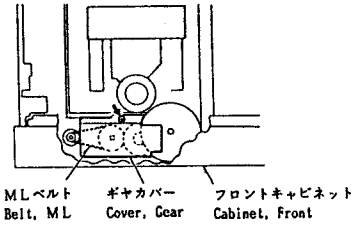


Fig-4

4. Inserting the Tray

1) Fully turn the drive gear in the direction indicated by arrow Ⓐ.
2) Pass the tray under the guide of boss ② until it reaches the edge of boss ① so that the tray does not touch the drive gear.(See Figure-5)
   Note: At that time, hold the drive gear so that it is not moved.
3) The gear and tray are engaged in Step 2. Turn the gear in the direction indicated by arrow Ⓑ and check that the tray is completely engaged with the gear. Next, push the tray from the direction indicated by arrow Ⓒ. (See Figure-5)
   Note: Be sure to turn the gear by fingers and to engage it with the tray. If the tray is pushed out of engagement, it cannot be inserted completely.

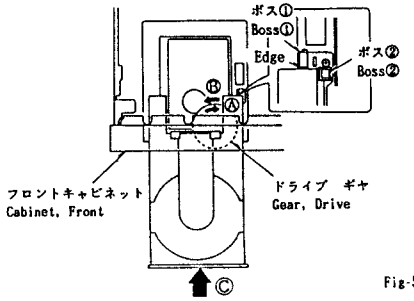
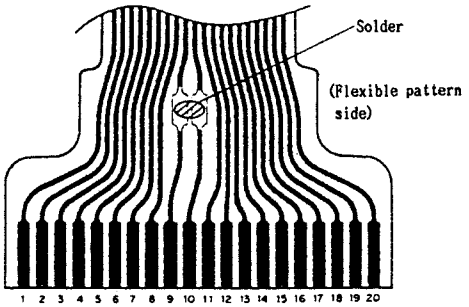


Fig-5

1. Precautions on Optical Block (KSS-151A) Replacement

The electrostatic potential of clothes or the body may ruin the laser diode in the optical block. Be sure to ground the body and workbench and pay attention that the clothes do not touch the diode.

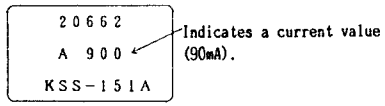
After the connector is connected, remove the solder shown in the figure below.



Pin No.	
1	SD
2	SD
3	2-axis FCS⊖
4	2-axis TRK⊖
5	2-axis TRK⊕
6	2-axis FCS⊕
7	VS
8	VS
9	LD GND
10	LD Laser
11	LD monitor
12	LD reference
13	GND
14	PD D
15	PD C
16	PD A
17	PD B
18	PD Vcc
19	PD F
20	PD E

2. Checking the Laser Diode

1) Observe the current value on the label which is attached to the optical pickup.



The current value varies depending on the set.

2) Turn on the power switch

3) Measure the voltage at both ends of R102 (22-ohm).

$$Iop = \frac{V_{R102}}{R102} = \frac{V_{R102}}{22\Omega}$$

ELECTRICAL MAIN PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
===IC===		
	87-001-184-010	IC,CXA1081S
	87-001-400-010	IC,CXA1082S
	87-001-403-010	IC,CXD1088Q
	87-020-896-010	IC,CXD1125
	87-020-796-010	IC,CXK5816M
	84-736-610-010	IC,L7A0150
	84-736-642-010	IC,M50955-421SP
	87-020-901-010	IC,M51945B
	87-027-925-010	IC,M5220
	87-001-383-010	IC,M5220P
	87-020-619-010	IC,M5238L
	87-001-401-010	IC,M54564P
	87-020-940-010	IC,M5F7805L
	87-020-871-010	IC,M5F78M12L
	87-001-416-010	IC,M5F79M05
	87-020-892-010	IC,M74HC02P
	87-001-415-010	IC,PCM56PK
	87-001-409-010	IC,SBX1483-52(REMOTE SENSOR)
	87-001-413-010	IC,TA7256P
	87-001-414-010	IC,TC74HC4053AP
	84-700-748-010	IC,TC74HC74P
	84-736-609-010	IC,TMM2464AF CAL
	87-001-411-010	IC,TOTX172
===TRANSISTOR===		
	89-502-465-010	FET,2SK246GR
	89-110-154-010	TRANSISTOR,2SA1015Y
	89-106-837-010	TRANSISTOR,2SA683 S
	89-109-705-010	TRANSISTOR,2SA970GR
	89-210-154-010	TRANSISTOR,2SB1015Y
	89-313-834-010	TRANSISTOR,2SC1383(S)
	89-318-155-010	TRANSISTOR,2SC1815GR
	89-318-154-010	TRANSISTOR,2SC1815Y
	89-322-405-010	TRANSISTOR,2SC2240GR
	89-328-785-010	TRANSISTOR,2SC2878A
	89-414-064-010	TRANSISTOR,2SD1406Y
	87-026-219-010	TRANSISTOR,DTA144ES
	87-026-218-010	TRANSISTOR,DTC144ES
===DIODE===		
	87-020-110-010	DIODE,1SS177
	87-020-123-010	DIODE,DS445
	87-001-428-010	DIODE,EGP10D
	87-027-626-010	DIODE,S5277D
	87-027-364-010	DIODE,ZENER HZ12A3L
	87-027-393-010	DIODE,ZENER HZ4C2
	87-027-552-010	DIODE,ZENER HZ6B3L
===SERVO CIRCUIT BOARD SECTION===		
PCB-A	*	SERVO CIRCUIT BOARD
C101	*87-018-104-010	CAP,CERA-SOL SS 10P
C103	*87-018-097-010	CAP,CERA-SOL SS 2.2P
C104	*87-010-263-010	CAP,ELECT 100-10
C105	*87-010-378-010	CAP,ELECT 10-16
C106	*87-010-400-010	CAP,ELECT 0.47-50SME
C111	*87-010-265-010	CAP,ELECT 33-16SME
C113	*87-010-265-010	CAP,ELECT 33-16SME
C114	*87-010-265-010	CAP,ELECT 33-16SME
C116	*87-010-265-010	CAP,ELECT 33-16SME
C122	*87-015-624-010	CAP,ELECT BP 4.7-50
C127	*87-014-164-010	CAP,FILM (TF) 0.56-50J

REF.NO.	PART NO.	DESCRIPTION
C129	*87-010-265-010	CAP,ELECT 33-16SME
C136	*87-010-400-010	CAP,ELECT 50-0.47SME
C138	*87-010-265-010	CAP,ELECT 33-16SME
C139	*87-010-379-010	CAP,ELECT 22-16SME
C141	*87-010-404-010	CAP,ELECT 4.7-50SME
C142	*87-010-401-010	CAP,ELECT 1-50SME
C148	*87-010-378-010	CAP,ELECT 10-16
C150	*87-010-687-010	CAP,ELECT 120-6.3 SXE
C151	*87-010-687-010	CAP,ELECT 120-6.3 SXE
C152	*87-018-209-010	CAP,CERA-SOL 0.1
C153	*87-018-209-010	CAP,CERA-SOL 0.1
C154	*87-010-379-010	CAP,ELECT BP 22-16
C155	*87-010-265-010	CAP,ELECT 33-16SME
C157	*87-010-265-010	CAP,ELECT 33-16SME
C159	*87-010-265-010	CAP,ELECT 33-16SME
C161	*87-010-265-010	CAP,ELECT 33-16SME
C163	*87-010-265-010	CAP,ELECT 33-16SME
C165	*87-010-265-010	CAP,ELECT 33-16SME
C169	*87-010-265-010	CAP,ELECT 33-16SME
EM101	*87-008-372-010	FILTER EMI BLORNI
EM102	*87-008-372-010	FILTER EMI BLORNI
EM103	*87-008-372-010	FILTER EMI BLORNI
L101	*87-003-102-010	COIL,CHOKE 10UH
L102	*87-003-102-010	COIL,CHOKE 10UH
L103	*87-003-102-010	COIL,CHOKE 10UH
R202	*87-022-048-010	RES,ARRAY RYLS 10J 22K
R203	*87-022-047-010	RES,ARRAY RYLS 9J 22K
R204	*87-022-046-010	RES,ARRAY RYLS 8J 22K
R205	*87-022-049-010	RES,ARRAY RYLS 8J 1K
SFR101	*87-021-739-010	SFR 2.2K
SFR102	*87-021-743-010	SFR 22K
SFR103	*87-021-743-010	SFR 22K
SFR104	*87-021-743-010	SFR 22K
SFR105	*87-021-743-010	SFR 22K
SFR106	*87-021-797-010	SFR 1K
===AUDIO CIRCUIT BOARD SECTION===		
PCB-B	*	AUDIO CIRCUIT BOARD
C401	*87-014-202-010	CAP,PP 1000P
C402	*87-014-202-010	CAP,PP 1000P
C501	*87-010-682-010	CAP,ELECT 220-16 KS
C502	*87-010-682-010	CAP,ELECT 220-16 KS
C503	*87-010-682-010	CAP,ELECT 220-16 KS
C504	*87-010-682-010	CAP,ELECT 220-16 KS
C505	*87-018-123-010	CAP,CERA-SOL SS 220P
C506	*87-018-123-010	CAP,CERA-SOL SS 220P
C507	*87-010-679-010	CAP,ELECT 10-16 KS
C508	*87-010-679-010	CAP,ELECT 10-16 KS
C509	*87-010-679-010	CAP,ELECT 10-16 KS
C510	*87-010-679-010	CAP,ELECT 10-16 KS
C511	*87-014-199-010	CAP,PP 390P
C512	*87-014-199-010	CAP,PP 390P
C513	*87-014-199-010	CAP,PP 390P
C514	*87-014-199-010	CAP,PP 390P
C515	*87-014-194-010	CAP,PP 0.015G
C516	*87-014-194-010	CAP,PP 0.015G
C517	*87-014-203-010	CAP,PP 100P
C518	*87-014-203-010	CAP,PP 100P
C519	*87-014-196-010	CAP,PP 2200PG
C520	*87-014-196-010	CAP,PP 2200PG
C521	*87-014-200-010	CAP,PP 470PJ
C522	*87-014-200-010	CAP,PP 470PJ
C525	*87-010-690-010	CAP,ELECT BP 47-16 KS
C526	*87-010-690-010	CAP,ELECT BP 47-16 KS
C527	*87-018-134-010	CAP,CERA-SOL SS 0.01

REF.NO.	PART NO.	DESCRIPTION
C526	*87-018-134-010	CAP,CERA-SOL SS 0.01
C529	*87-010-685-010	CAP,ELECT 33-16 SXE
C530	*87-010-685-010	CAP,ELECT 33-16 SXE
C531	*87-018-209-010	CAP,CERA-SOL 0.1
C532	*87-018-209-010	CAP,CERA-SOL 0.1
C533	*87-010-679-010	CAP,ELECT 10-16 KS
C534	*87-010-679-010	CAP,ELECT 10-16 KS
C535	*87-010-679-010	CAP,ELECT 10-16 KS
C536	*87-010-679-010	CAP,ELECT 10-16 KS
C541	*87-010-678-010	CAP,ELECT 3300-25 GS
C542	*87-010-678-010	CAP,ELECT 3300-25 GS
C543	*87-018-209-010	CAP,CERA-SOL 0.1
C544	*87-018-209-010	CAP,CERA-SOL 0.1
C545	*87-018-134-010	CAP,CERA-SOL SS 0.01
C546	*87-018-134-010	CAP,CERA-SOL SS 0.01
C547	*87-010-683-010	CAP,ELECT 100-16 KS
C548	*87-010-683-010	CAP,ELECT 100-16 KS
C549	*87-010-650-010	CAP,ELECT 1000-25 AWD
C550	*87-010-650-010	CAP,ELECT 1000-25 AWD
C551	*87-010-683-010	CAP,ELECT 100-16 KS
C552	*87-010-683-010	CAP,ELECT 100-16 KS
C555	*87-010-396-010	CAP,ELECT 470-35SME
C557	*87-018-209-010	CAP,CERA-SOL 0.1
C558	*87-018-209-010	CAP,CERA-SOL 0.1
C559	*87-018-209-010	CAP,CERA-SOL 0.1
C561	*87-018-209-010	CAP,CERA-SOL 0.1
C562	*87-018-209-010	CAP,CERA-SOL 0.1
C563	*87-018-107-010	CAP,CERA-SOL SS 18P
C564	*87-018-107-010	CAP,CERA-SOL SS 18P
C565	*87-018-119-010	CAP,CERA-SOL SS 100P
C566	*87-018-119-010	CAP,CERA-SOL SS 100P
C567	*87-018-209-010	CAP,CERA-SOL 0.1
C568	*87-018-131-010	CAP,CERA-SOL 1000P
C569	*87-018-119-010	CAP,CERA-SOL SS 100P
C570	*87-018-119-010	CAP,CERA-SOL SS 100P
C571	*87-018-134-010	CAP,CERA-SOL SS 0.01
C572	*87-018-134-010	CAP,CERA-SOL SS 0.01
C577	*87-015-141-010	CAP,ELECT BP 10-16
C578	*87-015-141-010	CAP,ELECT BP 10-16
C579	*87-018-209-010	CAP,CERA-SOL 0.1
C580	*87-018-209-010	CAP,CERA-SOL 0.1
C581	*87-018-209-010	CAP,CERA-SOL 0.1
C583	*87-018-209-010	CAP,CERA-SOL 0.1
C585	*87-018-209-010	CAP,CERA-SOL 0.1
C591	*87-010-685-010	CAP,ELECT 33-16 SXE
C592	*87-010-685-010	CAP,ELECT 33-16 SXE
EM505	*87-008-372-010	FILTER EMI BLORNI
EM506	*87-008-372-010	FILTER EMI BLORNI
EM507	*87-008-372-010	FILTER EMI BLORNI
EM508	*87-008-372-010	FILTER EMI BLORNI
EM509	*87-008-372-010	FILTER EMI BLORNI
EM510	*87-008-372-010	FILTER EMI BLORNI
J101	*87-009-029-010	PIN JACK 2P T6180(FIXED)
J102	*87-009-029-010	PIN JACK 2P T6180(VARIABLE)
L501	*87-003-102-010	COIL CHOKE 10UH
L502	*87-003-102-010	COIL CHOKE 10UH
R520	*87-025-307-010	RES,MF 1.5KF 1/4W
R521	*87-025-284-010	RES,MF 18KF 1/4W
R522	*87-025-284-010	RES,MF 18KF 1/4W
R523	*87-025-283-010	RES,MF 12KF 1/4W
R524	*87-025-283-010	RES,MF 12KF 1/4W
R525	*87-025-283-010	RES,MF 12KF 1/4W
R526	*87-025-283-010	RES,MF 12KF 1/4W
R529	*87-025-307-010	RES,MF 1.5KF 1/4W
R530	*87-025-307-010	RES,MF 1.5KF 1/4W
R539	*87-022-045-010	RES,MF 4.3K-1/4W
R540	*87-022-045-010	RES,MF 4.3K-1/4W
R541	*87-025-271-010	RES,MF 5.1KF 1/4W
R542	*87-025-271-010	RES,MF 5.1KF 1/4W
R543	*87-025-276-010	RES,MF 1KF 1/4W
R544	*87-025-276-010	RES,MF 1KF 1/4W
R545	*87-025-276-010	RES,MF 1KF 1/4W
R546	*87-025-276-010	RES,MF 1KF 1/4W
R549	*87-025-279-010	RES,MF 3.3KF 1/4W
R550	*87-025-279-010	RES,MF 3.3KF 1/4W
R587	*87-022-044-010	RES,MF 1.3K-1/4W
R588	*87-022-044-010	RES,MF 1.3K-1/4W
SFR503	*87-021-805-010	SFR 100K(M)
SFR504	*87-021-805-010	SFR 100K(M)
SFR505	*87-021-801-010	SFR 10K(M)
SFR506	*87-021-801-010	SFR 10K(M)
VR501	87-024-147-010	VOLUME 10K(PHONE/VARIABLE)

---LBSS CIRCUIT BOARD SECTION---

PCB-C	*	LBSS CIRCUIT BOARD
C1	*87-018-209-010	CAP,CERA-SOL 0.1
C2	*87-010-265-010	CAP,ELECT 33-16SME
C3	*87-018-209-010	CAP,CERA-SOL 0.1
C4	*87-018-209-010	CAP,CERA-SOL 0.1
C5	*87-018-209-010	CAP,CERA-SOL 0.1
C402	*87-018-209-010	CAP,CERA-SOL 0.1
C403	*87-018-107-010	CAP,CERA-SOL SS 18P
C404	*87-018-107-010	CAP,CERA-SOL SS 18P
C405	*87-018-209-010	CAP,CERA-SOL 0.1
C406	*87-010-265-010	CAP,ELECT 33-16SME
C407	*87-010-263-010	CAP,ELECT 100-10
C408	*87-018-209-010	CAP,CERA-SOL 0.1
C409	*87-018-209-010	CAP,CERA-SOL 0.1
C410	*87-010-265-010	CAP,ELECT 33-16SME
C411	*87-018-209-010	CAP,CERA-SOL 0.1
C412	*87-010-265-010	CAP,ELECT 33-16SME
C413	*87-018-131-010	CAP,CERA-SOL 1000P
C421	*87-018-117-010	CAP,CER-SOL 68P
C422	*87-018-117-010	CAP,CER-SOL 68P
C423	*87-018-209-010	CAP,CERA-SOL 0.1
C424	*87-018-209-010	CAP,CERA-SOL 0.1
C425	*87-018-209-010	CAP,CERA-SOL 0.1
C428	*87-018-209-010	CAP,CERA-SOL 0.1
C429	*87-018-119-010	CAP,CERA-SOL SS 100P
C431	*87-018-209-010	CAP,CERA-SOL 0.1
C701	*87-018-030-010	CAP,CERA-SOL 82P
EM401	*87-008-372-010	FILTER EMI BL OIRNI
EM402	*87-008-372-010	FILTER EMI BL OIRNI
EM403	*87-008-372-010	FILTER EMI BL OIRNI
L401	*87-003-102-010	COIL CHOKE 10UH
L402	*87-003-102-010	COIL CHOKE 10UH
L403	*87-003-102-010	COIL CHOKE 10UH
L404	*87-003-102-010	COIL CHOKE 10UH
X401	*84-733-617-010	CRYSTAL 16.9344MHZ

---FRONT CIRCUIT BOARD SECTION---

PCB-D	*	FRONT CIRCUIT BOARD
C351	*87-018-209-010	CAP,CERA-SOL 0.1
C352	*87-010-265-010	CAP,ELECT 33-16SME
C353	*87-018-209-010	CAP,CERA-SOL 0.1
C354	*87-010-265-010	CAP,ELECT 33-16SME
C355	*87-018-209-010	CAP,CERA-SOL 0.1
C356	*87-018-209-010	CAP,CERA-SOL 0.1
D359	87-001-402-010	LED SLP-274B(PLAY)
D360	87-001-404-010	LED SLP-474B(PAUSE)
FL351	84-736-607-010	FL,8-BT-719K
S353	87-031-893-010	TACT SW(⟵)
S352	87-031-893-010	TACT SW(⟶)

REF.NO.	PART NO.	DESCRIPTION
S351	87-031-893-010	TACT SW(⏮B SKIP)
S354	87-031-893-010	TACT SW(A↔B)
S355	87-031-893-010	TACT SW(▶PLAY)
S356	87-031-893-010	TACT SW(AC)
S357	87-031-893-010	TACT SW(+10)
S358	87-031-893-010	TACT SW(0)
S359	87-031-893-010	TACT SW(⏏ OPEN/CLOSE)
S360	87-031-893-010	TACT SW(⏪F BWD)
S361	87-031-893-010	TACT SW(⏩F SKIP)
S362	87-031-893-010	TACT SW(TIME)
S363	87-031-893-010	TACT SW(PRGM)
S364	87-031-893-010	TACT SW(7)
S365	87-031-893-010	TACT SW(8)
S366	87-031-893-010	TACT SW(9)
S367	87-031-893-010	TACT SW(⏩F FWD)
S368	87-031-893-010	TACT SW(■ STOP)
S369	87-031-893-010	TACT SW(BLANK)
S370	87-031-893-010	TACT SW(DEL)
S371	87-031-893-010	TACT SW(4)
S372	87-031-893-010	TACT SW(5)
S373	87-031-893-010	TACT SW(6)
S374	87-031-893-010	TACT SW(ALL/1)
S375	87-031-893-010	TACT SW(⏸ PAUSE)
S376	87-031-893-010	TACT SW(REC CAL)
S377	87-031-893-010	TACT SW(CHECK)
S378	87-031-893-010	TACT SW(1)
S379	87-031-893-010	TACT SW(2)
S380	87-031-893-010	TACT SW(3)

---POWER CIRCUIT BOARD SECTION---

PCB-E	*	POWER CIRCUIT BOARD
C301	*87-010-687-010	CAP,ELECT 120-6.3 SXE
C302	*87-018-209-010	CAP,CERA-SOL 0.1
C303	*87-010-687-010	CAP,ELECT 120-6.3 SXE
C304	*87-018-209-010	CAP,CERA-SOL 0.1
C305	*87-010-689-010	CAP,ELECT 4700-16 SXE
C306	*87-010-689-010	CAP,ELECT 4700-16 SXE
C307	*87-018-209-010	CAP,CERA-SOL 0.1
C308	*87-010-407-010	CAP,ELECT 33-50 SME
C309	*87-010-699-010	CAP,ELECT 330-63 KME
⚠S302	87-036-136-010	ROTARY SW 1-1-3(AC VOLTAGE)(H)

---DIGITAL OUTPUT CIRCUIT BOARD SECTION---

PCB-F	*	DIGITAL OUTPUT CIRCUIT BOARD
C251	*87-010-265-010	CAP,ELECT 33-16SME
C252	*87-010-265-010	CAP,ELECT 33-16SME
C253	87-018-134-010	CAP,CERA-SOL SS 0.01
C254	*87-010-680-010	CAP,ELECT 33-16(KS)
C256	*87-018-134-010	CAP,CERA-SOL SS 0.01
C257	*87-018-134-010	CAP,CERA-SOL SS 0.01
C258	*87-018-134-010	CAP,CERA-SOL SS 0.01
C259	*87-018-119-010	CAP,CERA-SOL SS 100P
C260	*87-018-134-010	CAP,CERA-SOL SS 0.01
J251	87-009-028-010	JACK PIN 1P T5384(COAXIAL)
J253	87-049-866-010	CONNECTOR 3P M36 SYNC(DAT SYNC
T251	*87-006-155-010	COIL TPS247MN-0366AN

---D/A SW CIRCUIT BOARD SECTION---

PCB-G	*	D/A SW CIRCUIT BOARD
S251	87-036-131-010	SLIDE SW 2-3NS(OUTPUT)

REF.NO.	PART NO.	DESCRIPTION

---H.P CIRCUIT BOARD SECTION---

PCB-H	*	H.P CIRCUIT BOARD
C573	*87-018-209-010	CAP,CERA-SOL 0.1
C575	*87-018-209-010	CAP,CERA-SOL 0.1
EM501	*87-008-372-010	FILTER EMI BLORNI
EM502	*87-008-372-010	FILTER EMI BLORNI
EM503	*87-008-372-010	FILTER EMI BLORNI
EM504	*87-008-372-010	FILTER EMI BLORNI
J103	87-009-018-010	JACK 6.3 HP-AU(PHONES)
S253	84-736-619-010	ROTARY SW(TIMER)

---SWITCH CIRCUIT BOARD SECTION---

PCB-I	*	SWITCH CIRCUIT BOARD
C601	*87-019-113-010	SPARK KILLER 0.0022E(E,K ONLY)
C601	*87-019-110-010	SPARK KILLER 0.01D(H ONLY)
C601	*87-019-111-010	SPARK KILLER 0.01U(C ONLY)
⚠S301	87-036-015-010	SWITCH AC SDDLD1(POWER)

---LED CIRCUIT BOARD SECTION---

PCB-J	*	LED CIRCUIT BOARD
D251	87-001-412-010	LED LT9010N(OUTPUT)

---MISCELLANEOUS---

⚠	*87-034-732-010	AC CORD H(H ONLY)
⚠	*87-034-731-010	AC CORD(UL)(C ONLY)
⚠	*87-034-734-010	AC CORD E(E ONLY)
⚠	*87-085-207-010	CORD BUSHING
⚠	*87-034-736-010	AC CORD BUSHING D(H ONLY)
⚠	*87-085-187-010	AC CORD BUSHING U(C ONLY)
⚠	*87-085-185-010	AC CORD BUSHING E(E,K ONLY)
	98-848-047-010	PICK UP KSS-151A
	9A-491-013-7A0	LINEAR MOTOR ASSY(DETECT)
	9A-491-013-8B0	LINEAR MOTOR ASSY(DRIVE)
	9X-264-240-810	MECHANISM CHASSIS ASSY(W/M201)
	9A-491-014-1A0	RELAY C.B ASSY(W/PCB-K)
M701	9A-491-013-1A0	MOTOR ASSY(LOADING)
⚠PT101	84-736-605-010	TRANSFORMER PT AU,H(H ONLY)
⚠PT101	84-736-602-010	TRANSFORMER PT AU,U(C ONLY)
⚠PT101	84-736-603-010	TRAMSFRMER PT AU,E(E ONLY)
⚠PT101	84-736-604-010	TRANSFORMER PT AU,K(K ONLY)
⚠PT102	84-736-615-010	TRANSFORMER PT DG,H(H ONLY)
⚠PT102	84-736-612-010	TRANSFORMER PT DG,U(C ONLY)
⚠PT102	84-736-613-010	TRANSFORMER PT DG,E(E ONLY)
⚠PT102	84-736-614-010	TRANSFORMER PT DG,K(K ONLY)
SW701	91-471-312-110	LEAF SW(LOAD SW)

Combination Circuit board A 84-736-631-010

PCB-A	**84-736-632-010**
PCB-C	**84-736-633-010**
PCB-D	**84-736-634-010**
PCB-G	**84-736-636-010**
PCB-J	**84-736-635-010**

Combination Circuit board B 84-736-621-010

PCB-B	**84-736-622-010**
PCB-E	**84-736-625-010**
PCB-F	**84-736-626-010**
PCB-H	**84-736-623-010**
PCB-J	**84-736-624-010**

IC DESCRIPTION

1. IC, CXA1082S

Pin No.	Pin name	I/O	Description
1	DVEE		-5V
2	DFCT	I	Interface input terminal for microcomputer.
3	TE	I	Tracking error signal input terminal.
4	TZC	I	Tracking zero-cross comparator input terminal.
5	ATSC	I	ATSC detection window comparator input terminal.
6	FE	I	Focus error signal input terminal.
7	VC		GND
8	FGD		Capacitor is inserted between this pin and pin 9 to decrease the focus servo's high-frequency gain.
9	FS3		Focus servo's high-frequency gain is selected by FS3 on/off operation.
10	FLB		Time-constant external terminal for raising the focus servo's low-frequency range.
11	FEO	O	Power transistor drive's operational amplifier output terminal.
12	FE⊖	I	Focus amplifier inversion input terminal.
13	SRCH		Time-constant external terminal for forming a focus search wave.
14	TGU		Time-constant external terminal for tracking high-frequency gain selection.
15	TG2		Time-constant external terminal for tracking high-frequency gain selection.
16	AVCC		+5V
17	TAO	O	Power transistor drive's operational amplifier output terminal.
18	TA⊖	I	Tracking amplifier's inversion input terminal.
19	SL⊕	I	Threading amplifier's noninversion input terminal.
20	SLO	O	Power transistor drive's operational amplifier output terminal.
21	SL⊖	I	Threading amplifier's inversion input terminal.
22	SSTOP	I	On/off detection signal terminal of disk's innermost detection limit switch
23	FSET		Terminal for setting the focus tracking's phase compensation peak and CLV LPF (f_0).
24	SENS	O	Interface output terminal for microcomputer.
25	AVEE		-5V
26	C. OUT	O	Interface output terminal for microcomputer.
27	DIRC	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
28	XRST	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
29	DATA	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
30	XLT	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
31	CLK	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
32	D GND		GND
33	BW	I	Loop filter's time-constant external terminal.
34	PDI	I	CX23035/CXD1135 phase comparator output PDO input terminal.
35	ISET		Passes a current to determine the focus search, tracking jump, and threading kick height.
36	VCOF		VCO's free-running frequency is proportional to the resistance value between this pin and pin 31.
37	3.5V		
38	C864	O	8.64MHz VCO output terminal.
39	LOCK	I	Interface input terminal for microcomputer. A pull-up resistor (47k ohms) is inserted only at pins 27 and 39.
40	MDP		CX23035/CXD1135 MDP connection terminal.
41	MON		CX23035/CXD1135 MON connection terminal.
42	FSW		LPF time-constant external terminal of CLV servo's error signal.
44	SPDL⊖	I	Spindle drive amplifier's inversion input terminal.
45	SPDLO	O	Power transistor drive's operational amplifier output terminal.
46	WDCK	I	Interface input terminal for microcomputer.
47	FOK	I	Interface input terminal for microcomputer.
48	MIRR	I	Interface input terminal for microcomputer.

2. IC, TMM24644AF

Pin No.	Pin name	I/O	Description
1	VPP	–	Program power.
2 21 23 ~ 10 25	A0 ~ A12	I	Address input.
11 15 ~ 13 19	O0 ~ O7	I/O	Data output (input).
14	GND	–	GND
20	CE	I	Chip enable input.
22	OE	I	Output enable input.
26	N. C.	–	No connection
27	PGM	I	Program control input.
28	VCC	–	Power supply (+5V).

3. IC, CXA1081S

Pin No.	Pin name	I/O	Description
1	RF1	I	The RF summing amplifier output is C-connected and input.
2	RF0	O	RF summing amplifier output. Eye pattern test point.
3	RF-	I	Inverting input of theRF summing amplifier. A feedback resistor is connected between pins 2 and 3.
4	P/N	I	Switches the input according to the polarity of the laser diode.
5	LD	O	Output to control the laser diode output.
6	PD	I	Connects the photo-detector which detects the laser diode output.
7	PD1	I	RF1-V amplifier (1) inverting input. Connected to PIN diode A+C for the current intput.
8	PD2	I	RF1-V amplifier (2) inverting input. Connected to PIN diode B+D for the current input.
9	VC	I	Reference voltage input within the IC. Connected to pin 14 with single power supply. Connected to the ground with the positive and negative power supply.
10	F	I	F1-V amplifier inverting input. Connected to PIN diode F for the current input.
11	E	I	E1-V amplifier inverting input. Connected to PIN diode E for the current input.
12	EO	O	E1-V amplifier output. A feedback resistor is connected.
13	E1	I	Adjusts the E1-V amplifier gain.
14	VR	O	Outputs the neutral voltage. Connected to pin 9 with the single power supply. OPEN with positive and negative power supply.
15	CC2	O	Defect bottom hold (1) output. A capacitor is connected between pins 15 and 16.
16	CC1	I	The defect bottom (1) output is C-connected and input.
17	VEE	-	Grounded with the single power supply. Becomes a negative power supply with the positive and negative power supply.
18	FE BIAS	I	Inputs a bias voltage for the positive-phase input of the focus error amplifier.
19	FE	O	Focus error amplifier output.
20	TE	O	Tracking error amplifier output.
21	DEFECT	O	Defect detection output. Outputs the "H" signal that detects a defect on the mirror surface.
22	MIRR	O	Mirror comparator output.
23	CP	O	A mirror hold capacitor is connected to this pin.
24	CB	O	The defect bottom hold (2) capacitor is connected to this pin.
25	DGND	-	Ground in the digital circuit.
26	ASY	I	Auto-symmetry control input.
27	EFM	O	EFM output comparator output.
28	FOK	O	Focus OK output.
29	LD ON	I	Laser diode ON/OFF control input.
30	VCC	-	Positive power supply

4. IC, CXD1125

Pin No.	Pin name	I/O	Description
1	FSW	O	Output to switch the time constant of the spindle motor output filter.
2	MON	O	Spindle motor on/off control output.
3	MDP	O	Spindle motor drive output. Coarse control in the CLV. S mode and phase control in the CLV. P mode.
4	MDS	O	Spindle motor drive output. Speed control in the CLV. S mode.
5	EFM	I	Inputs an EFM signal from the RF amplifier.
6	ASY	O	Output to control the slice level of the EFM signal.
7	LOCK	O	The GFS signal is sampled by the WFCK/16. When the GFS signal is "H", this pin outputs "H", and when the signal is "L" 8 times continuously, it outputs "L".
8	VCOO	O	VCO output. When this is locked to the EFM signal. f=8.6436MHz
9	VCOI	I	VCO input
10	TEST	I	(OV)
11	PDO	O	Phase comparison output between the EFM signal and VCO/2.
12	VSS	-	GND (0V)
13	CLK	I	Inputs a clock signal for the serial data transfer from CPU. Latches data at the rise of the clock segnal.
14	XLT	I	Latch input from CPU. Latches 8 bit shift register data (serial data from CPU) to each register.
15	DATA	I	Inputs serial data from CPU.
16	XRST	I	System reset input. The system is reset at "L" input.
17	CNIN	I	Tracking pulse input.
18	SENSE	O	Outputs the internal state according to the address.
19	MUTG	I	Muting input. When the ATTM in the internal register is "L", the system is in the normal state if the MUTG is "L" and the sound is muted if the MUTG is "H".
20	CRCF	O	Outputs the CRC checking result of sub-code Q.
21	EXCK	I	Clock input for the sub-code serial output.
22	SBSO	O	Sub-code serial output.
23	SUBQ	O	Sub-code Q output.
24	SCOR	O	Sub-code sync S0+S1 output.
25	SQCK	I/O	Clock signal for reading of sub-code Q.
26	SQEX	I	SQCK select input.
27	DOTX	O	Digital audio interface output (WFCK is output when being off).
28	GFS	O	Display output of the frame sync locking state. Goes "H" when locked.
29	DB08	I/O	Data pin of the external RAM. DATA8 (MSB)

Pin No.	Pin name	I/O	Description
30	DB07	I/O	Data pin of the external RAM. DATA7
31	DB06	I/O	Data pin of the external RAM. DATA6
32	DB05	I/O	Data pin of the external RAM. DATA5
33	VDD	–	Power supply (+5V).
34	DB04	I/O	Data pin of the external RAM. DATA4
35	DB03	I/O	Data pin of the external RAM. DATA3
36	DB02	I/O	Data pin of the external RAM. DATA2
37	DB01	I/O	Data pin of the external RAM. DATA1 (LSB)
38	RA01	O	Address output of the external RAM. ADDR01 (LSB)
39	RA02	O	Address output of the external RAM. ADDR02
40	RA03	O	Address output of the external RAM. ADDR03
41	RA04	O	Address output of the external RAM. ADDR04
42	RA05	O	Address output of the external RAM. ADDR05
43	RA06	O	Address output of the external RAM. ADDR06
44	RA07	O	Address output of the external RAM. ADDR07
45	RA08	O	Address output of the external RAM. ADDR08
46	RA09	O	Address output of the external RAM. ADDR09
47	RA10	O	Address output of the external RAM. ADDR10
48	RA11	O	Address output of the external RAM. ADDR11 (MSB)
49	RAWE	O	Outputs the WRITE ENABLE signal to the external RAM (active at "L").
50	RACS	O	Outputs the CHIP SELECT signal to the external RAM (active at "L").
51	C4M	O	1/2 division output of the crystal oscillator. F=4.2336MHz
52	VSS	–	GND (0V)
53	XTAL	I	Crystal oscillator input. f=8.4672MHz
54	XTAO	O	Crystal oscillator output. f=8.4672MHz
55	MD1	I	Mode select input 1 used at "H" / Mode select input 2 used at "L" / Mode select input 3 used at "L" → (Used in the mode with the clock frequency 8.4672MHz, the digital output OFF, the digital filter ON)
56	MD2	I	
57	MD3	I	
58	SLOB	I	Input to switch the code of the audio data output. "L" causes the 2 second complement output and "H" causes the offset binary output.
59	PSSL	I	Input to switch the mode of the audio data output. "L" causes serial output and "H" causes parallel output.
60	APTR	O	Aperture correction control output. 44.1kHz with the filter OFF.
61	APTL	O	Aperture correction control output. 44.1kHz with the filter OFF.

Pin No.	Pin name	I/O	Description
62	DA01	O	DA01 (LSB of parallel audio data) output with PSSL="H". C1F1 output with PSSL="L".
63	DA02	O	DA02 output with PSSL="H". C1F2 output with PSSL="L".
64	DA03	O	DA03 output with PSSL="H". C2F1 output with PSSL="L".
65	DA04	O	DA04 output with PSSL="H". C2F2 output with PSSL="L".
66	DA05	O	DA05 output with PSSL="H". C2FL output with PSSL="L".
67	DA06	O	DA06 output with PSSL="H". C2PO output with PSSL="L".
68	DA07	O	DA07 output with PSSL="H". RFCK output with PSSL="L".
69	DA08	O	DA08 output with PSSL="H". WFCK output with PSSL="L".
70	DA09	O	DA09 output with PSSL="H". PLCK output with PSSL="L". (Note 1)
71	DA10	O	DA10 output with PSSL="H". UGFS output with PSSL="L".
72	DA11	O	DA11 output with PSSL="H". GTOP output with PSSL="L".
73	VDD	–	Power supply (+5V)
74	DA12	O	DA12 output with PSSL="H". RA0V output with PSSL="L".
75	DA13	O	DA13 output with PSSL="H". C4LR output with PSSL="L".
76	DA14	O	DA14 output with PSSL="H". C210 output with PSSL="L".
77	DA15	O	DA15 output with PSSL="H". C210 output with PSSL="L". (Note 2)
78	DA16	O	DA16 (MSB of parallel audio data) output with PSSL="H". DATA output with PSSL="L". (Note 3)
79	WDCK	O	Strobe signal output. 88.2kHz with the filter OFF.
80	LRCK	O	Strobe signal output. 44.1kHz with the filter OFF.

Note 1) PLCK: VCO/2 output. When locked to the EFM signal. f=4.3218MHz

Note 2) C210: Bit clock signal. f=2.1168MHz

Note 3) DATA: Audio signal serial data output

5. IC, M50955-421SP

Pin No.	Pin name	I/O	Description
1	VCC		+5
2	AF ADJ	I	Adjustment mode terminal.
3	SYNC REC	I	DAT sync rate terminal.
4	SYNC PAUSE	O	
5	SYNC RMT	O	
6	CAL 0	O	RBC calibration control.
7	CAL 1	O	
8	DF MUTE	O	Audio muting.
9	EMP	O	Presence of EMP signal is detected and output.
10	SUB Q	I	Serial data input of subcode Q. Connected to SUBQ of IC105.
11	SQCK	O	Read clock output of subcode Q. Connected to SQCK of IC105.
12	FOK	I	Focus OK signal input from RF amplifier. Connected to FOK of IC101.
13	LDON	O	Laser diode control output. Connected to LDON of IC101.
14	GFS	I	Frame sync locked input.
15	MUTG	O	Muting output of IC105. Connected to MUTG of IC105.
16	SENS	I	Sense input. Connected to SENS of IC102 and IC105.
17	DATA	O	Serial data output sent to IC102 and IC105.
18	XLT	O	Serial data latch output sent to IC102 and IC105.
19	CLK	O	Serial data transfer clock to IC102 and IC105.
20	CALZ	O	RBC calibration control.
21	LMCS		+5
22	SW TMPLAY	I	TIMER PLAY detection switch input.
23	SW RANDOM	I	RANDOM PLAY detection switch input.
24	SCOR	I	Subcode S0 + S1 input. Connected to SCOR of IC105.
25	RMC	I	Remote control signal input.
26	CN VSS		GND
27	RESET	I	Reset terminal.
28	X IN	I	Crystal clock input.
29 ~ 31			Not used.
32	VSS		GND
33	KEY 4	I	Key matrix data input.
34	KEY 3	I	
35	KEY 2	I	
36	KEY 1	I	
37	KEY 0	I	
38	UP		GND
39	CLOSE	I	Disc table's CLOSE detection switch input.
40	OPEN	I	Disc table's OPEN detection switch input.
41 ~ 56	SEG 16 ~ SEG 1	O	Fluorescent tube's segment output.
57 ~ 64	G8 ~ G1	O	Operation key's digit signal output.

6. IC, L7A0150

Pin No.	Pin name	I/O	Description
1 60 2 ~ 52 64 ~ 57	AD00 ~ AD12	O	Address output to calibration ROM
3	CENO	O	Chip enable to calibration ROM
4 11 ~ ~ 8 13	D0I ~ D7I	I	Data input from calibration ROM
9 26 58	VDD	–	+5V power supply.
10 25 59	VSS	–	GND power.
14	DFWCI	I	Word clock to LBSS circuit.
15	ADIN	I	A-channel data input to LBSS circuit.
16	ASIN	I	A-channel shift input to LBSS circuit.
17	BDIN	I	B-channel data input to LBSS circuit.
18	BSIN	I	B-channel shift input to LBSS circuit.
19	DFBCI	I	Bit clock to LBSS circuit.
20	DFLRI	I	L/R clock to LBSS circuit.
21	CZMI	I	Bit clock to calibration circuit.
22	MUXDO	O	Data output from calibration circuit.
23	DATAI	I	Data input to calibration circuit.
24	LRNI	I	L/R clock to calibration circuit.
27	STPN	I	Stop input in calibration circuit.
28	MD2I	I	Mode setting in calibration circuit.
29	MD1I	I	
30	MD0I	I	

Pin No.	Pin name	I/O	Description
31	RLNO	O	R/L clock from LBSS circuit.
32	SFTO	O	Shift/normal output from LBSS circuit.
33	DGB	O	B-channel deglich output from LBSS circuit.
34	DGA	O	A-channel deglich output from LBSS circuit.
35	BDOUT	O	B-channel data output from LBSS circuit.
36	WCOUT	O	Word clock output from LBSS circuit.
37	BCOUT	O	Bit clock output from LBSS circuit.
38	ADOUT	O	A-channel data output from LBSS circuit.
40	INTN	I	Initial
41	TESTO	O	Test terminal. (Usually, set to OPEN.)
44	DINVN	I	ADOUT and BDOUT logic inversion is designated.
45	BSON	I	LBSS circuit on/off
46	STOUT	I	Data output, time sharing, and simultaneous setting in LBSS circuit.
47	SRLN	I	DFLRI logic inversion is designated.
48	DLYZ	I	Input position of data ⑮ to ⑱ is designated. Usually, set to "1".
49	TSEL B	I	} Timer time setting in LBSS circuit.
51	TSEL A	I	

7. IC. CXD1088Q

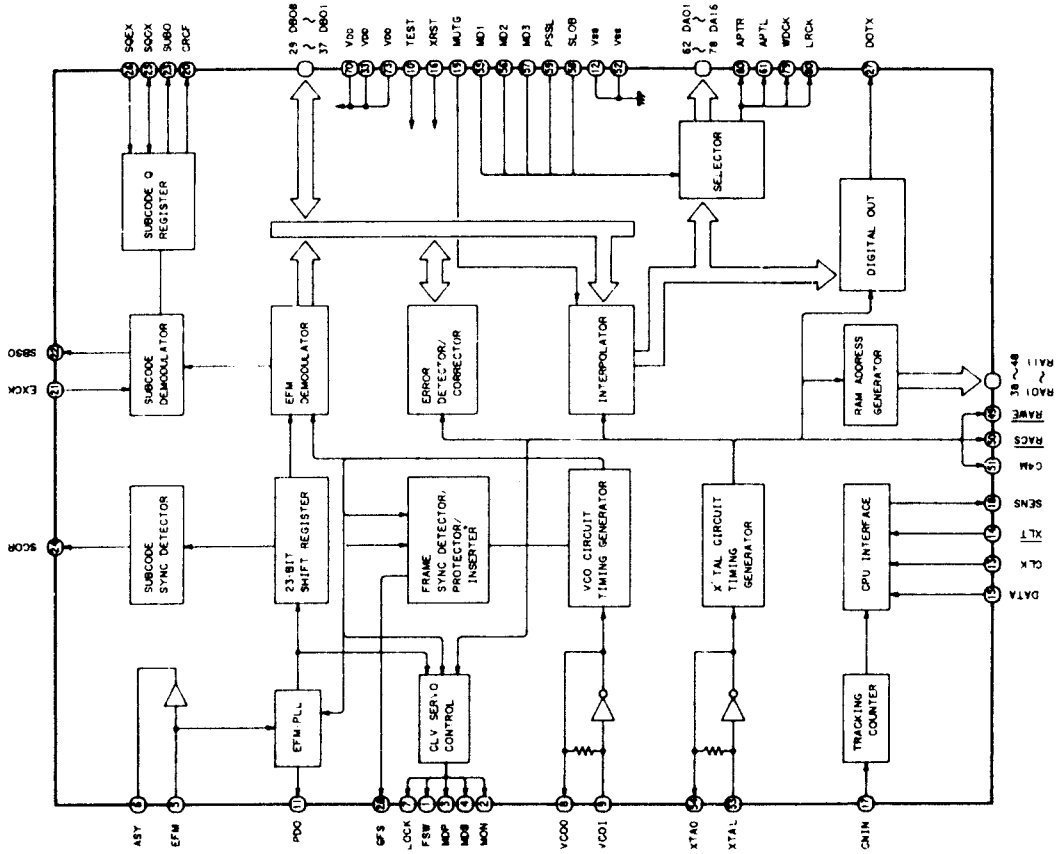
Pin No.	Pin name	I/O	Description
1 ∫ 5	D12 ∫ D16	O	D12 to D16 parallel output. Fixed in low during serial output.
6	VSS	–	-Power supply (0V)
7	MUTE	I	Output is set to "0" or offset value. Valid in high.
8	TEST1	I	Test terminal. Usually, fixed in low.
9	SOFT	I	Software muting on/off. Muted in highy.
10	HOLD	I	Muting is stopped. Stopped in high.
11	INIT	I	Power on Reset input. Active in low.
12	DPOL	I	Input data polarity is inverted.
13	LRCK	I	LRCK input.
14	DATA	I	16 bit x 2. Serial data input. 2's complement.
15	BCK	I	BCK input.
16	C2PO	I	Error flag input.
17	VDD	–	+Power supply (+5V)
18	TEST2	I	Test terminal. Usually, fixed in low.
19	ROM1	I	Used for 83rd. ROM selection. See the filter characteristic.
20	ROM2	I	Used for 21st. ROM selection. See the filter characteristic.
21	OFST	I	Offset is added to the output. Valid in high.
22	OPOL	I	Offset value's polarity is designated. "H" (+1Ω). "L" (-1Ω).
23	DRES	I	Data length during serial output. "H" : 18 bits. "L" : 16 bits.
24	FORM	I	Output format is designated. "H" : I²S. "L" : Sony.
25	SCK	O	System clock output for external IC ($384F_s$).
26	XOUT	O	Crystal oscillator output ($384F_s$).
27	XIN	I	Crystal oscilator input ($384F_s$).
28	VSS	–	-Power supply (0V).
29	APTR	O	R-channel aperture clock.
30	APTL	O	L-channel aperture clock.
31	SP	I	Output serial/parallel selection. "H" : parallel. "L" : serial.
32	LRO	O	LRCK output ($4F_s$)
33	D1	O	D1 (MSB) parallel output. BCK serial output ($4F_s$).
34	D2	O	D2 parallel output. DAT serial output ($4F_s$).
35	D3	O	D3 parallel output. Serial : LRC output (I² mode), WCK output (Sony mode).
36 ∫ 38	D4 ∫ D6	O	D4 to D6 parallel output. Fixed in low during serial output.
39	VDD	–	+Power supply (+5V).
40 ∫ 44	D7 ∫ D11	O	D7 to D11 parallel output. Fixed in low during serial output.

8. FL351, 8-BT-71GK

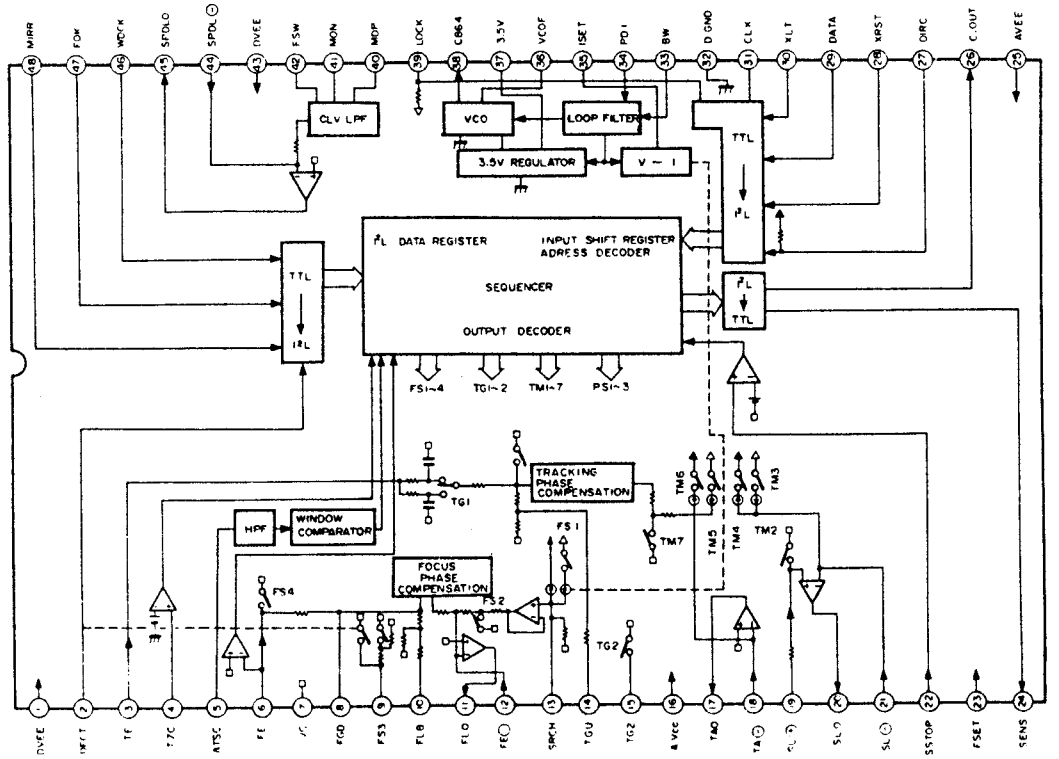
Pin No.		5	6	7	8	10	11	12	13
	Pin name	8G	7G	6G	5G	4G	3G	2G	1G
28	S1	PLAY	REMAIN TIME	–	・ ・	–	・ ・	H_z	2
29	S2	PAUSE	–	MIN	SEC	MIN	SEC	-	20
30	S3	1a	1a	1a	1a	1a	1a	EMPHASIS	3
31	S4	1b	1b	1b	1b	1b	1b	PROGRAM	5
32	S5	1f	1f	1f	1f	1f	1f	BLANK	8
34	S6	1g	1g	1g	1g	1g	1g	RANDOM	10
35	S7	1c	1c	1c	1c	1c	1c	REPEAT	13
36	S8	1e	1e	1e	1e	1e	1e	A B	15
37	S9	1d	1d	1d	1d	1d	1d	1	18
39	S10	2a	2a	2a	2a	2a	2a	1	4
40	S11	2b	2b	2b	2b	2b	2b	6	7
41	S12	2f	2f	2f	2f	2f	2f	11	9
42	S13	2g	2g	2g	2g	2g	2g	16	12
44	S14	2c	2c	2c	2c	2c	2c	–	14
45	S15	2e	2e	2e	2e	2e	2e	–	17
46	S16	2d	2d	2d	2d	2d	2d	ALL	19
47	S17	TRACK	INDEX	–	–	–	–	–	–
1 50 2 49	F	} Filament							
3 14 33 4 ⟩ 38 9 27 43 48	NP	} Not used.							

IC BLOCK DIAGRAM

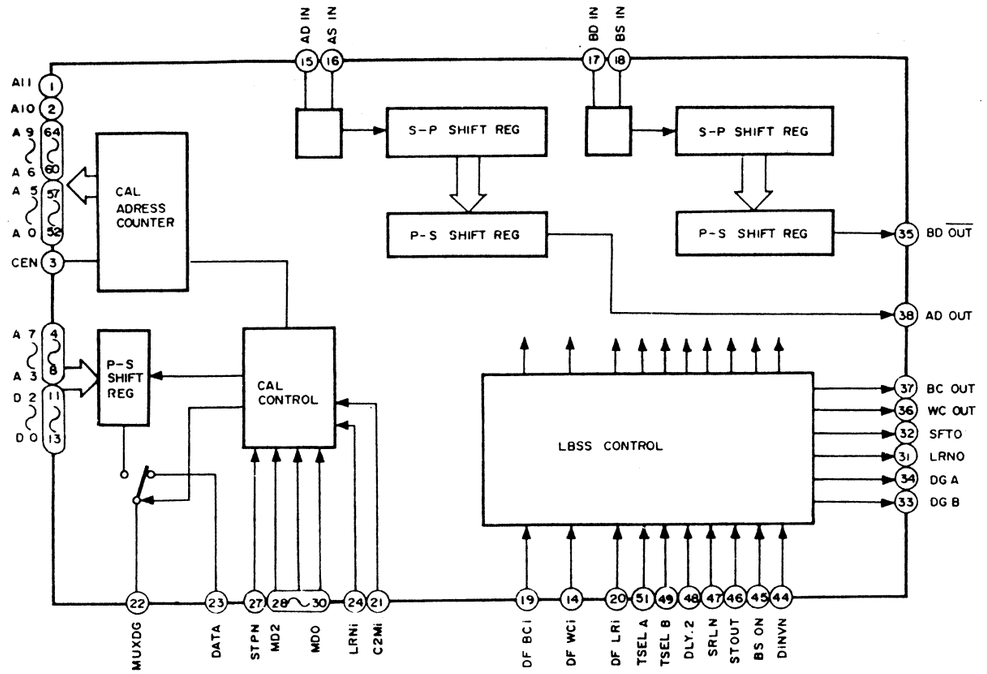
IC 105 CXD1125



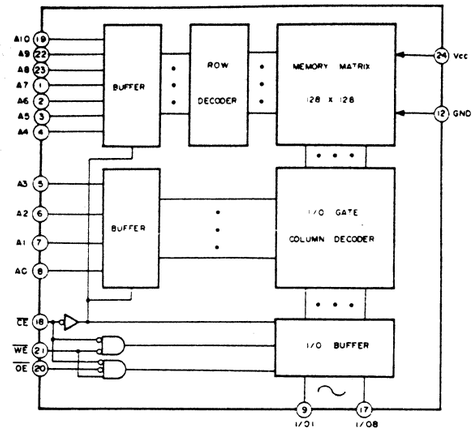
IC 102 CXA1082S



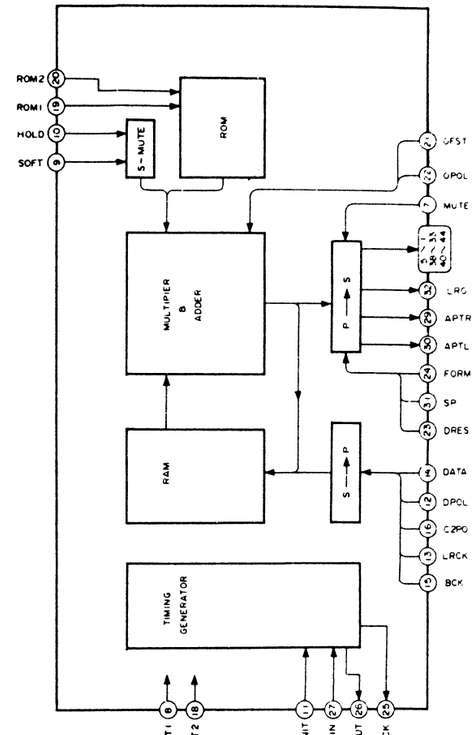
IC 403. 404 L7A0150



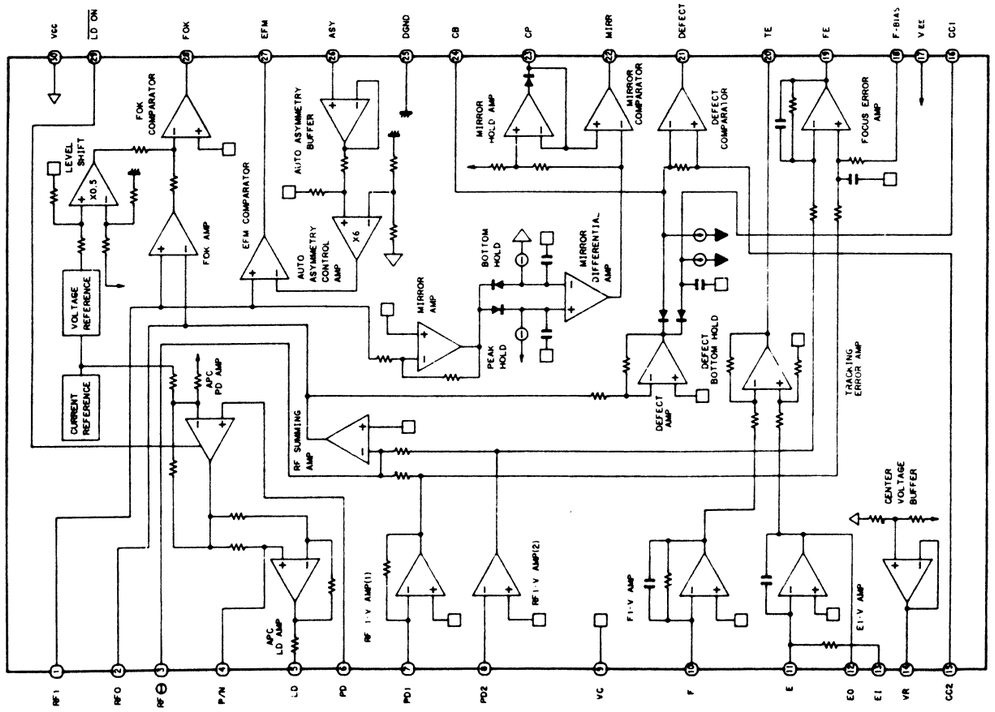
IC 106 CXK5816



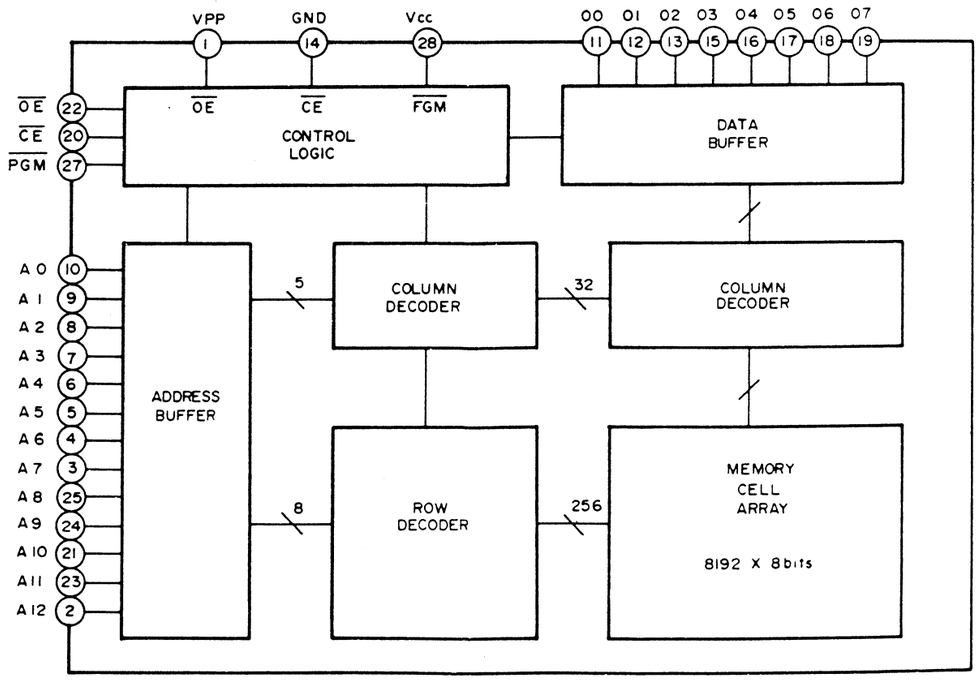
IC 402 CXD1088Q



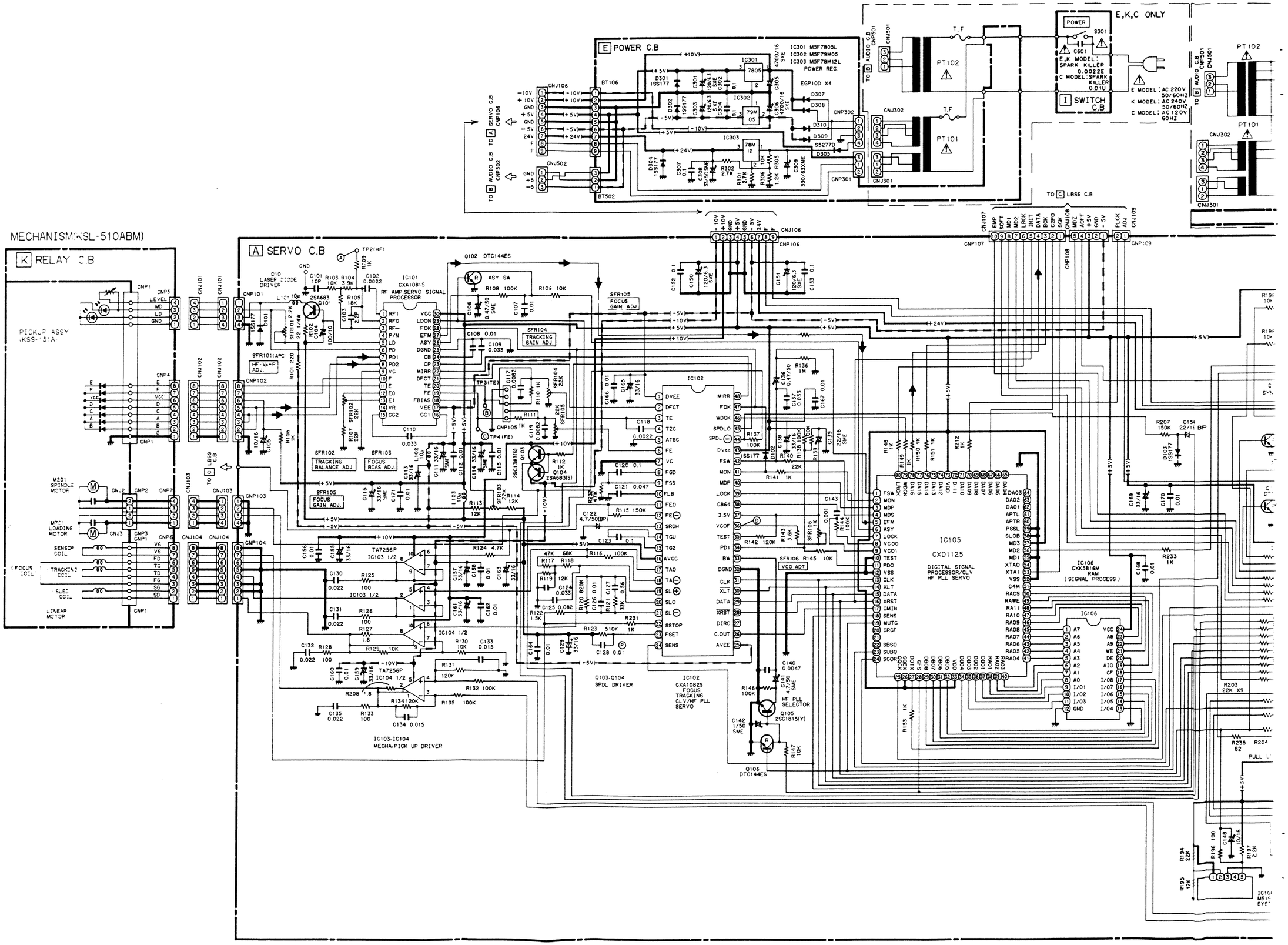
IC 101 CXA1081S



IC 401 TMM2464AF



SCHEMATIC DIAGRAM—1



E POWER C.B

IC301 M5F7805L
IC302 M5F79M05
IC303 M5F78M12L
POWER REG.

E,K,C ONLY

H ONLY

I SWITCH C.B

E MODEL : AC 220V 50/60HZ
K MODEL : AC 240V 50/60HZ
C MODEL : AC 120V 60HZ

AC120/220/240V 50/60HZ

J LED C.B

F DIGITAL OUTPUT C.B

G D/A SW C.B

D FRONT C.B

H H.P C.B

IC101 CXA1081S RF AMP SERVO SIGNAL PROCESSOR

IC102 CXA1082S FOCUS TRACKING CLV/HF PLL SERVO

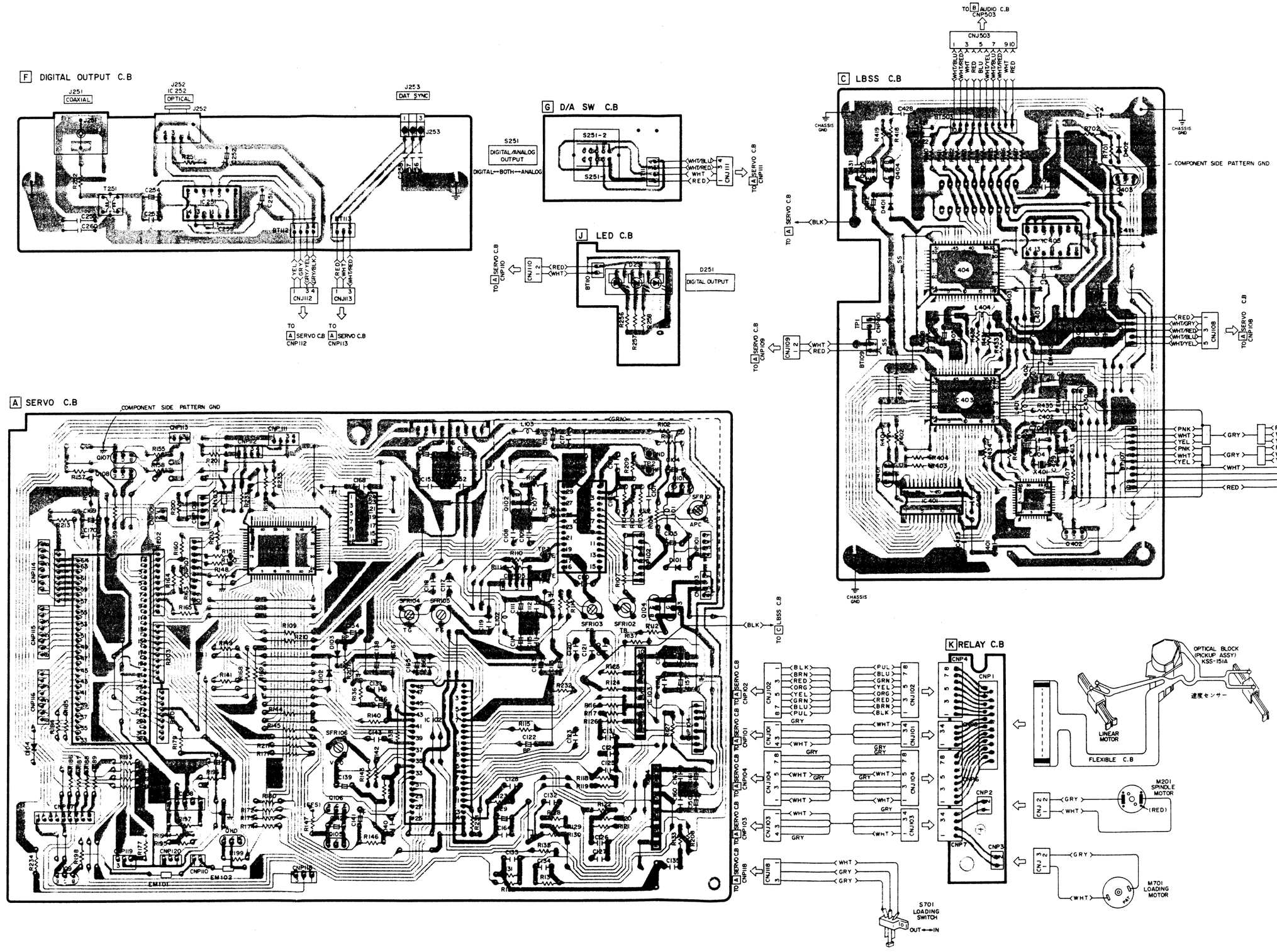
IC103.IC104 MECHA.PICK UP DRIVER

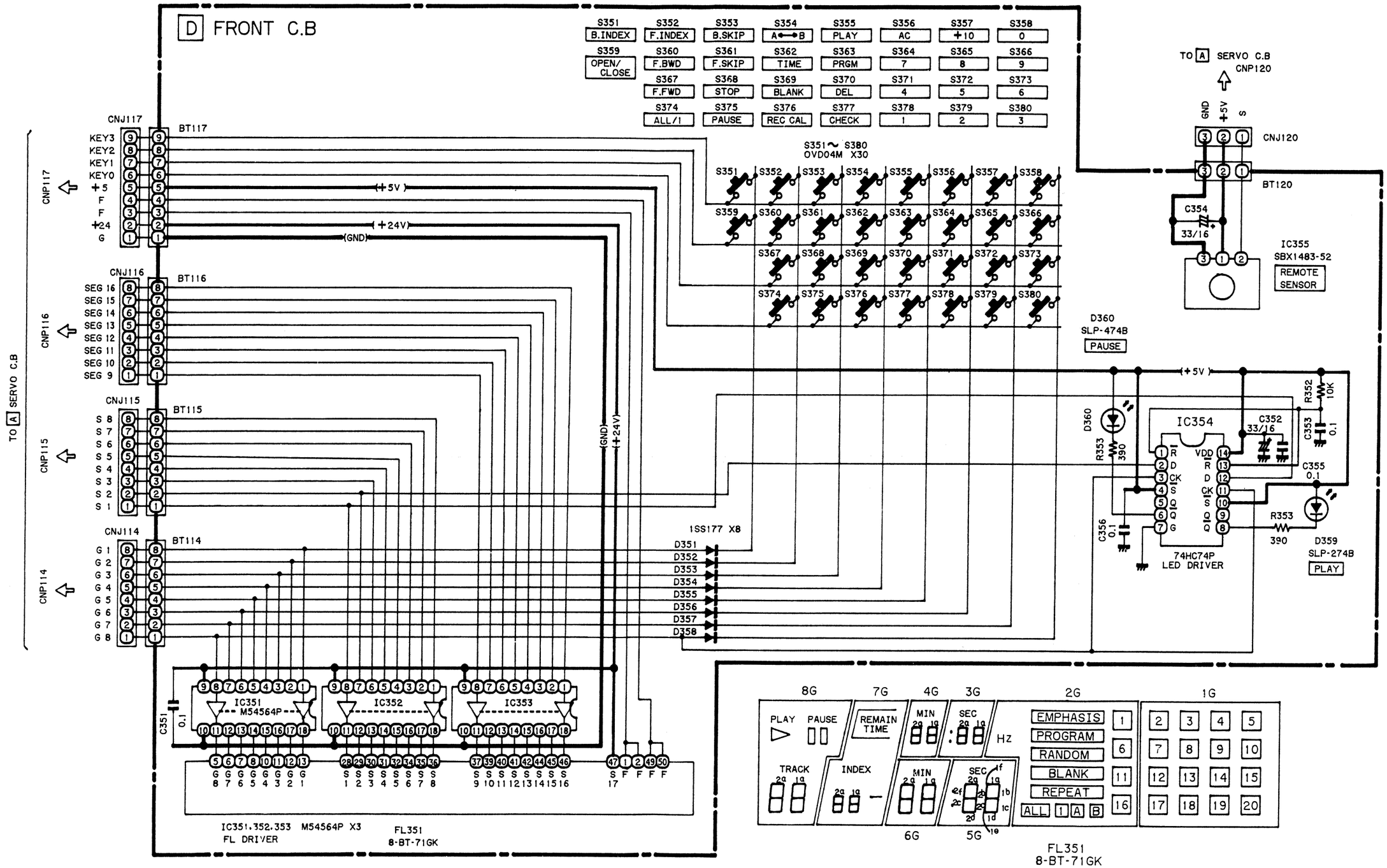
IC105 CXD1125 DIGITAL SIGNAL PROCESSOR/CLV HF PLL SERVO

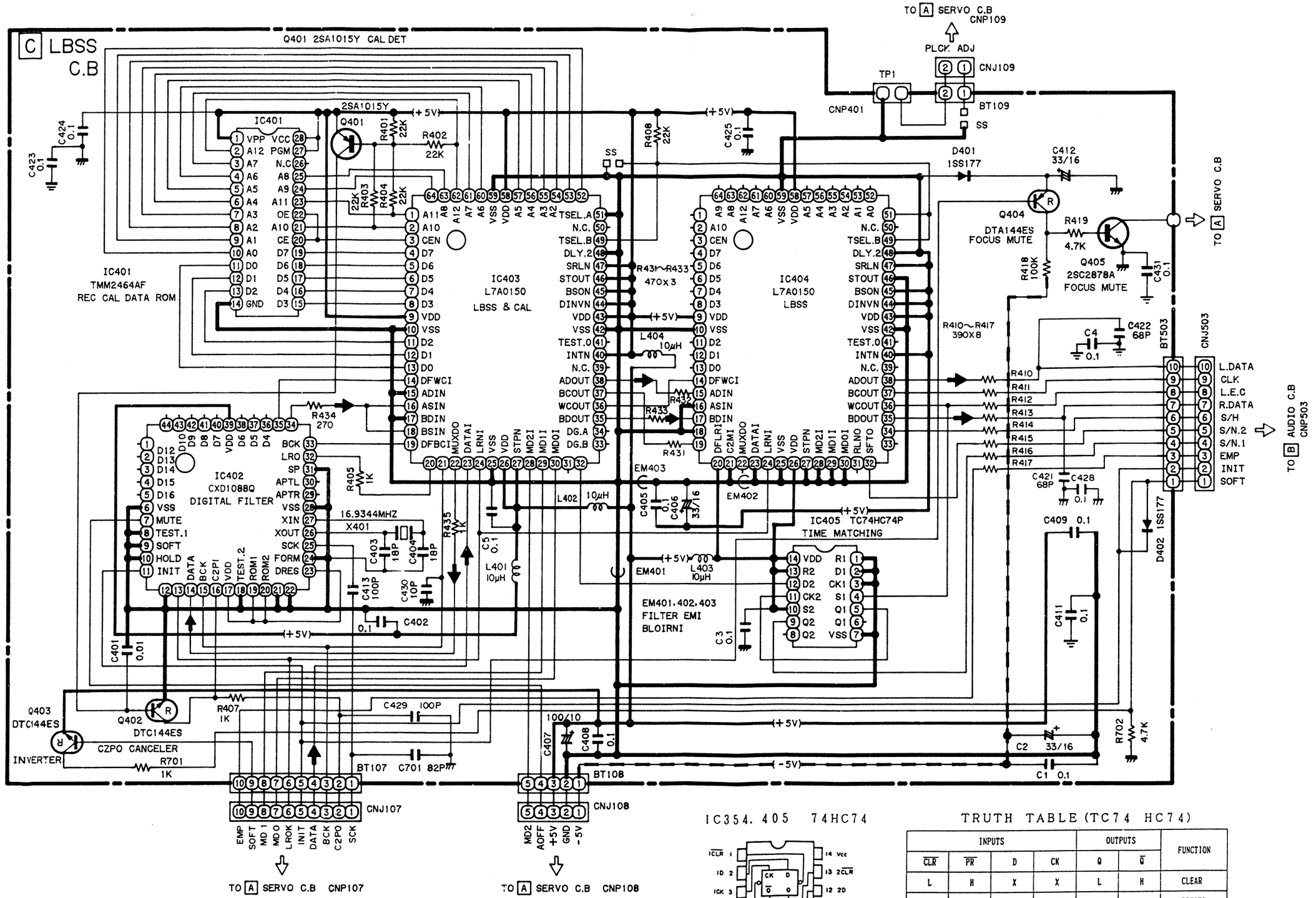
IC106 CXK5816M RAM (SIGNAL PROCESS)

IC107 M50955-421SP SYSTEM CONTROL

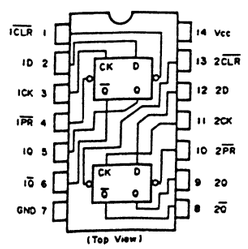
IC108 M51945B SYSTEM RESET


F DIGITAL OUTPUT C.B
J251 COAXIAL
J252 IC 252 OPTICAL
J253 DAT SYNC
TO A SERVO C.B CNP112
TO A SERVO C.B CNP113
G D/A SW C.B
S251 DIGITAL/ANALOG OUTPUT
DIGITAL←BOTH→ANALOG
TO A SERVO C.B CNP111
J LED C.B
D251 DIGITAL OUTPUT
TO A SERVO C.B CNP110
C LBSS C.B
TO B AUDIO C.B CNP503
CNJ503
CHASSIS GND
– COMPONENT SIDE PATTERN GND
TO A SERVO C.B CNP108
TO A SERVO C.B CNP109
TO A SERVO C.B CNP107
A SERVO C.B
COMPONENT SIDE PATTERN GND
TO C LBSS C.B
K RELAY C.B
TO A SERVO C.B CNP102
TO A SERVO C.B CNP101
TO A SERVO C.B CNP104
TO A SERVO C.B CNP103
TO A SERVO C.B CNP118
S701 LOADING SWITCH
OUT←→IN
OPTICAL BLOCK (PICKUP ASSY) KSS-151A
速度センサー
LINEAR MOTOR
FLEXIBLE C.B
M201 SPINDLE MOTOR
M701 LOADING MOTOR


D FRONT C.B
S351 B.INDEX
S352 F.INDEX
S353 B.SKIP
S354 A⟷B
S355 PLAY
S356 AC
S357 +10
S358 0
S359 OPEN/CLOSE
S360 F.BWD
S361 F.SKIP
S362 TIME
S363 PRGM
S364 7
S365 8
S366 9
S367 F.FWD
S368 STOP
S369 BLANK
S370 DEL
S371 4
S372 5
S373 6
S374 ALL/1
S375 PAUSE
S376 REC CAL
S377 CHECK
S378 1
S379 2
S380 3
S351~S380 OVD04M X30
CNJ117
BT117
KEY3
KEY2
KEY1
KEY0
+5
F
F
+24
G
CNP117
(+5V)
(+24V)
(GND)
CNJ116
BT116
SEG 16
SEG 15
SEG 14
SEG 13
SEG 12
SEG 11
SEG 10
SEG 9
CNP116
CNJ115
BT115
S 8
S 7
S 6
S 5
S 4
S 3
S 2
S 1
CNP115
CNJ114
BT114
G 1
G 2
G 3
G 4
G 5
G 6
G 7
G 8
CNP114
TO A SERVO C.B
1SS177 X8
D351
D352
D353
D354
D355
D356
D357
D358
C351 0.1
IC351 M54564P
IC352
IC353
IC351.352.353 M54564P X3
FL DRIVER
FL351
8-BT-71GK
TO A SERVO C.B
CNP120
GND
+5V
S
CNJ120
BT120
C354 33/16
IC355
SBX1483-52
REMOTE SENSOR
D360
SLP-474B
PAUSE
(+5V)
R352 10K
C353 0.1
IC354
C352 33/16
R353 390
C355 0.1
C356 0.1
74HC74P
LED DRIVER
D359
SLP-274B
PLAY
8G
7G
4G
3G
2G
1G
PLAY
PAUSE
REMAIN TIME
MIN
SEC
Hz
TRACK
INDEX
EMPHASIS
PROGRAM
RANDOM
BLANK
REPEAT
ALL
A
B
6G
5G
FL351
8-BT-71GK



IC354. 405 74HC74

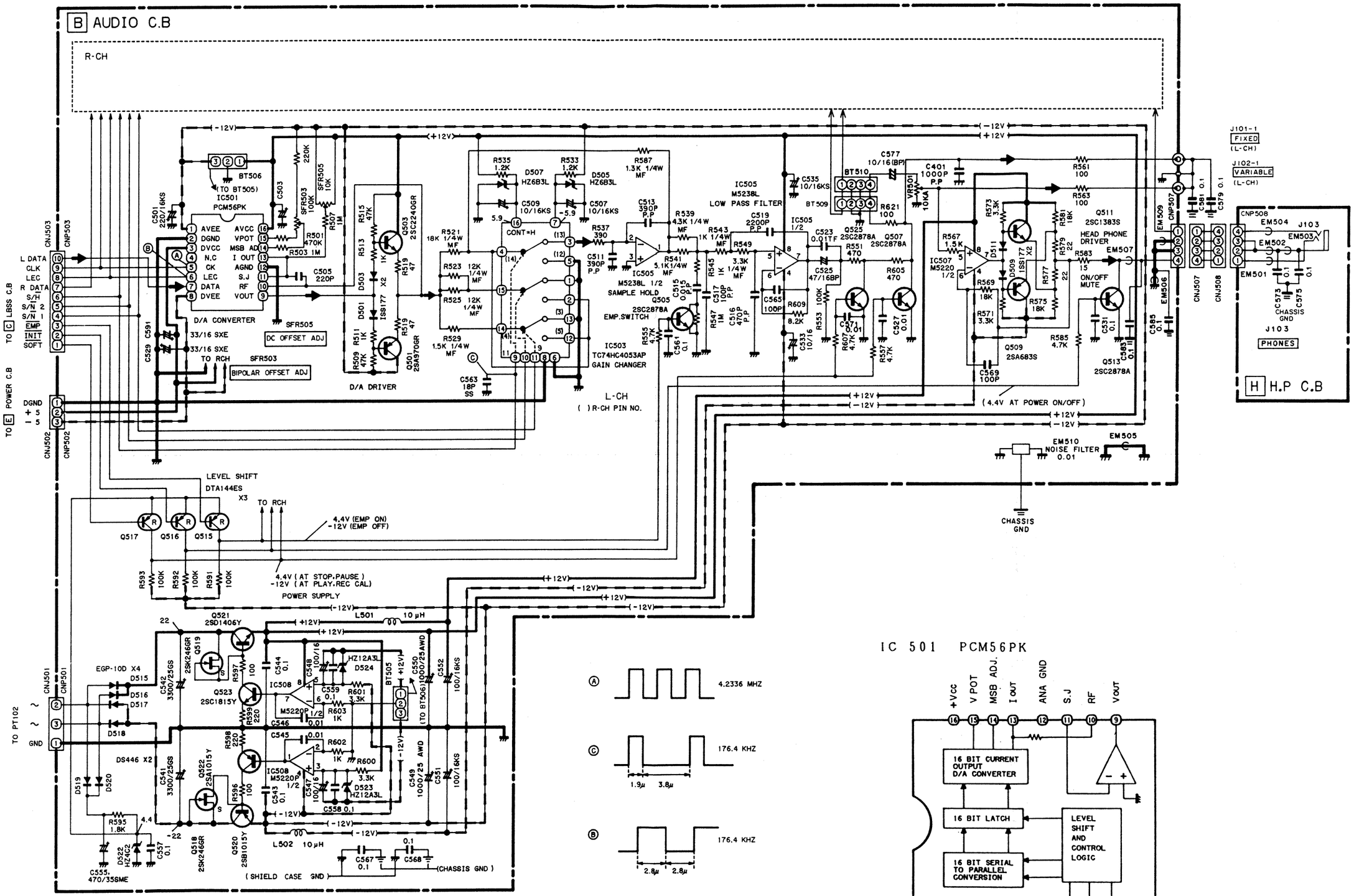


TRUTH TABLE (TC74 HC74)

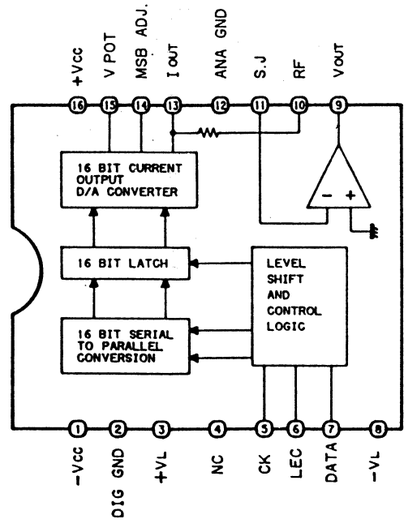
INPUTS				OUTPUTS		FUNCTION
$\overline{CLR}$	$\overline{PR}$	D	CK	Q	$\overline{Q}$	
L	H	X	X	L	H	CLEAR
H	L	X	X	H	L	PRESET
L	L	X	X	H	H	–
H	H	L	↑	L	H	–
H	H	H	↑	H	L	–
H	H	X	↓	Qn	$\overline{Qn}$	NO CHANGE

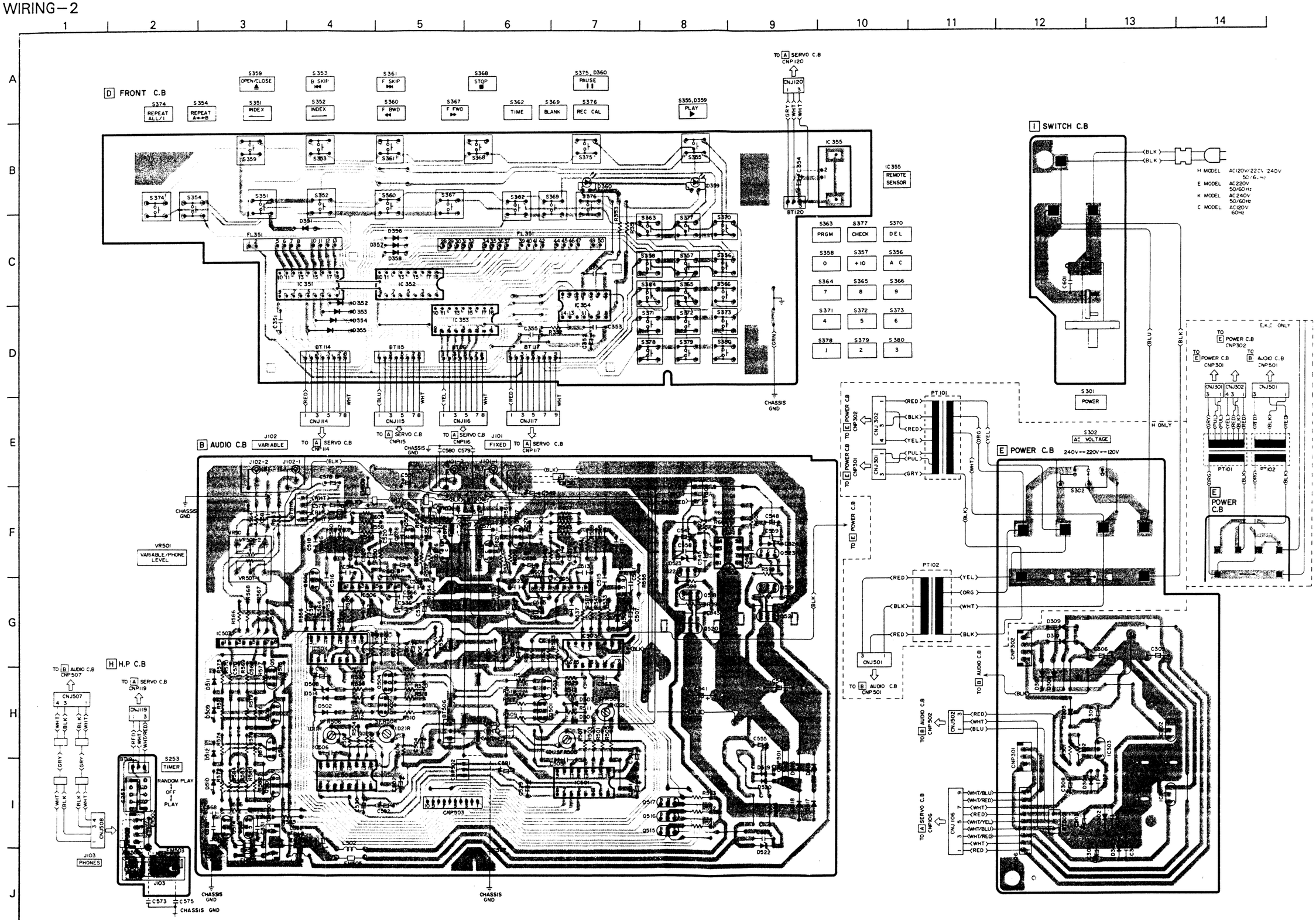
X: Don't care

SCHEMATIC DIAGRAM—4

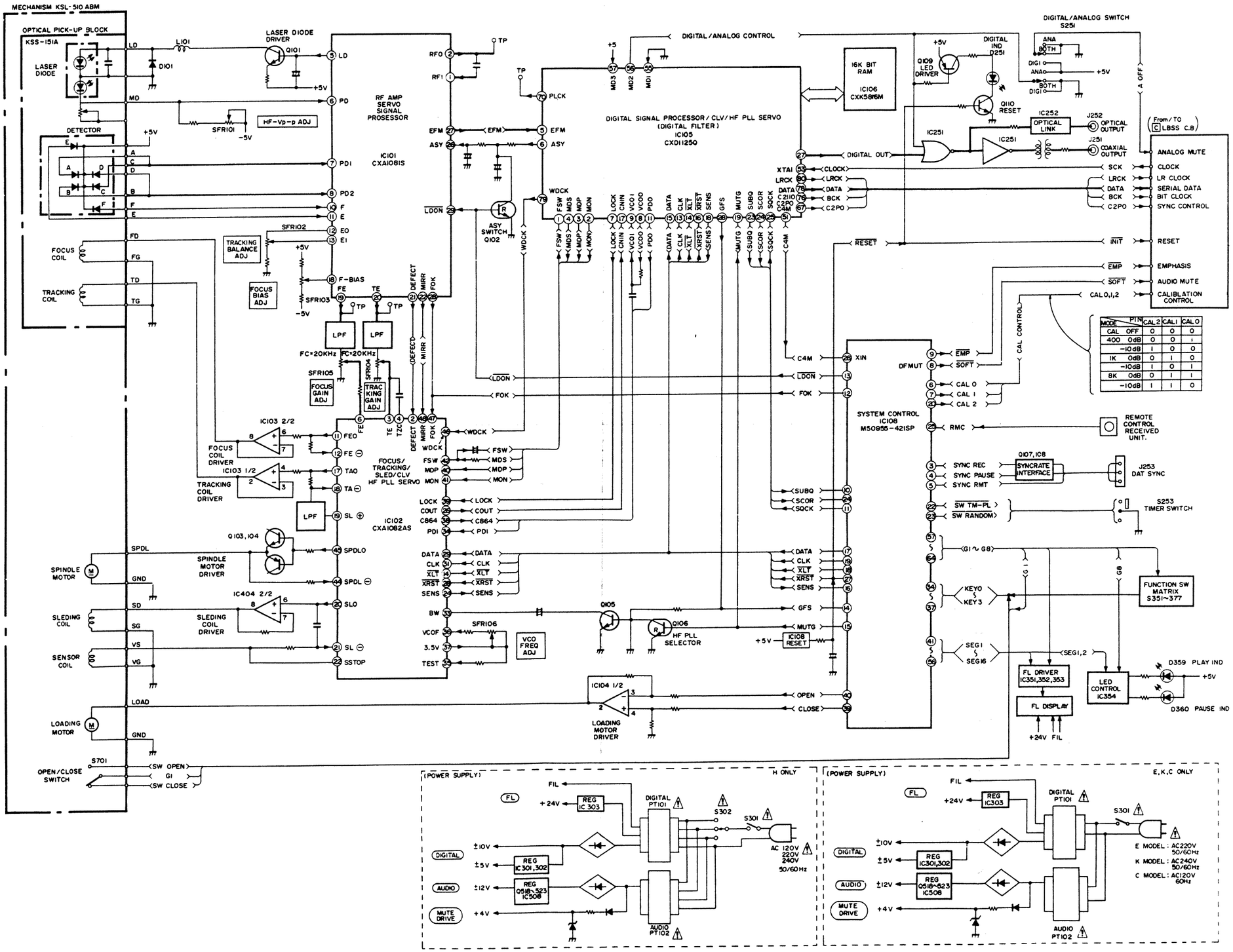


IC 501 PCM56PK

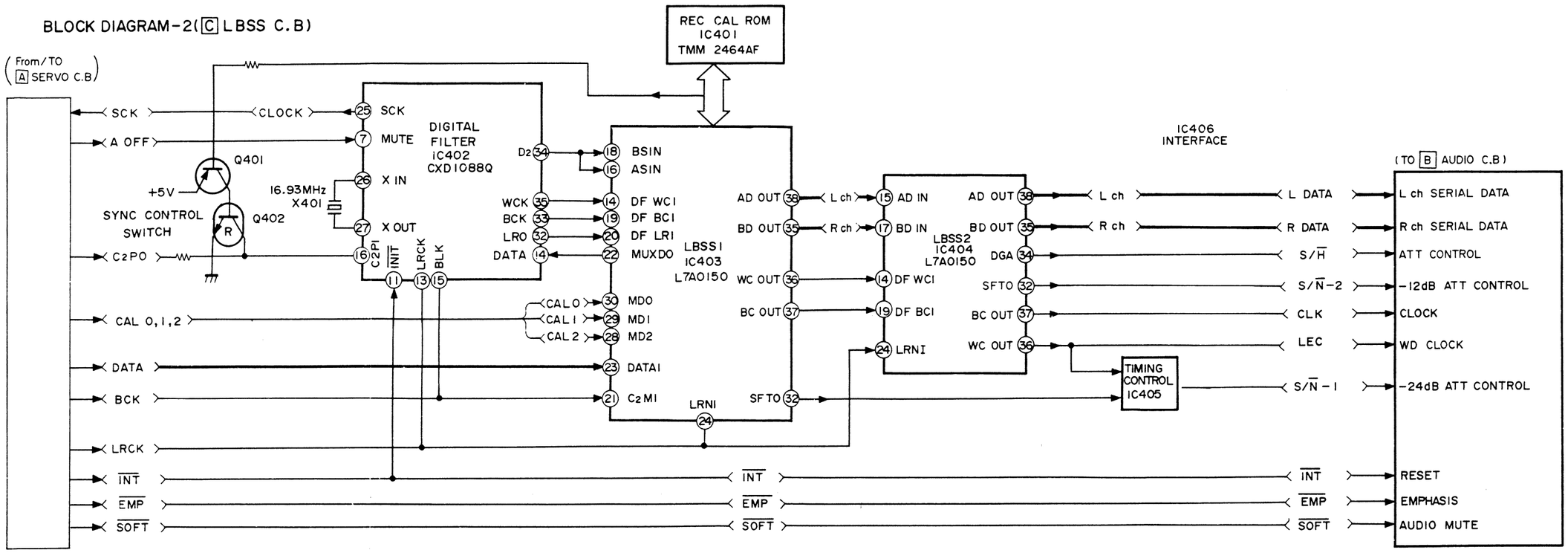


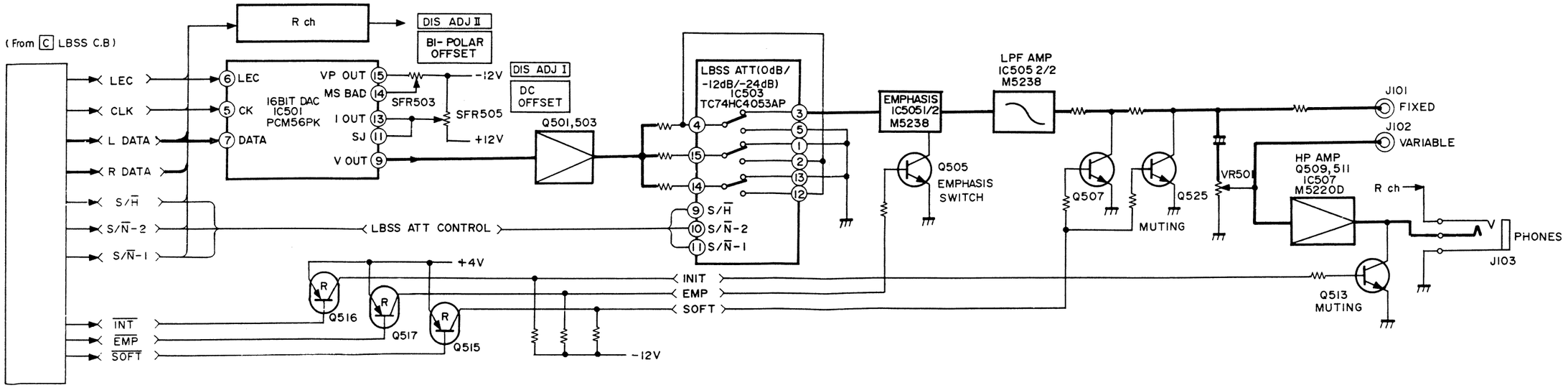

D FRONT C.B
S359 OPEN/CLOSE
S353 B SKIP
S361 F SKIP
S368 STOP
S375, D360 PAUSE
S374 REPEAT ALL/1
S354 REPEAT A↔B
S351 INDEX
S352 INDEX
S360 F BWD
S367 F FWD
S362 TIME
S369 BLANK
S376 REC CAL
S355, D359 PLAY
IC 355
IC355 REMOTE SENSOR
S363 PRGM
S377 CHECK
S370 DEL
S358 0
S357 +10
S356 A C
S364 7
S365 8
S366 9
S371 4
S372 5
S373 6
S378 1
S379 2
S380 3
TO A SERVO C.B CNP120
CNJ120
BT120
CHASSIS GND
I SWITCH C.B
H MODEL AC120V/220V 240V 50/60Hz
E MODEL AC220V 50/60Hz
K MODEL AC240V 50/60Hz
C MODEL AC120V 60Hz
S301 POWER
E.M.C ONLY
TO E POWER C.B CNP302
TO E POWER C.B CNP301
TO B AUDIO C.B CNP501
CNJ301
CNJ302
CNJ501
PT101
PT102
E POWER C.B
B AUDIO C.B
J102 VARIABLE
J101 FIXED
TO A SERVO C.B CNP114
TO A SERVO C.B CNP115
TO A SERVO C.B CNP116
TO A SERVO C.B CNP117
CNJ114
CNJ115
CNJ116
CNJ117
VR501 VARIABLE/PHONE LEVEL
H H.P C.B
TO B AUDIO C.B CNP507
TO A SERVO C.B CNP119
CNJ507
CNJ119
CNJ508
S253 TIMER
RANDOM PLAY
OFF
PLAY
J103 PHONES
CHASSIS GND
E POWER C.B 240V↔220V↔120V
S302 AC VOLTAGE
TO E POWER C.B CNP301
CNJ501
TO B AUDIO C.B CNP501
TO B AUDIO C.B CNP502
CNJ502
TO A SERVO C.B CNP106
CNJ106
H ONLY
D309
IC303

BLOCK DIAGRAM—1

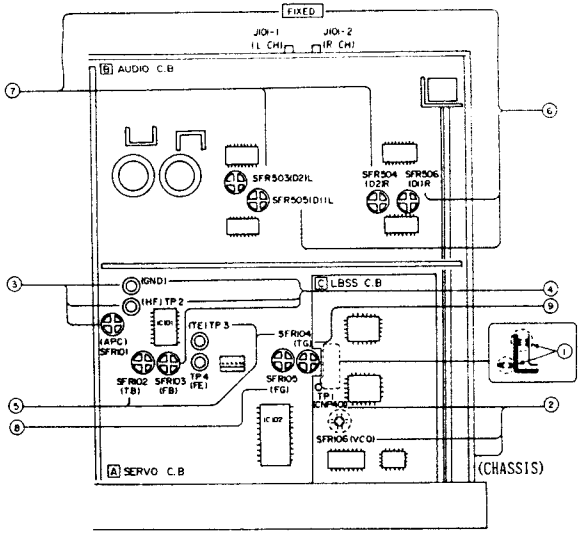


BLOCK DIAGRAM－2(C LBSS C.B)





ADJUSTMENT

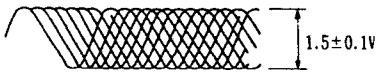


① Initializing
1. Sold and short two SSs on the C LBSS circuit board.
2. After adjustment, remove the grounding leads and solder.

② VCO Frequency Adjustment
1. Open the tray using the OPEN/CLOSE button.
2. Connect a frequency counter to TP1 (CNP401), GND (CHASSIS).
3. Adjust SFR106 so that the frequency counter reading is 4.98MHz to 5.02MHz.

③ HF Vp-p Adjustment
Make the HF Vp-p adjustment when replacing and repairing the optical block.
1. Connect an oscilloscope to TP2 (HF), GND.
2. Turn on the power switch.
3. Insert the disc YEDS-18 (YEDS-1) and press the ▷PLAY button.
4. Adjust SFR101 so that the waveform on the oscilloscope is as shown in the figure below.

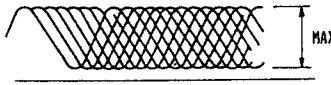
RF signal waveform



VOLT/DIV:0.5V
TIME/DIV:500ns

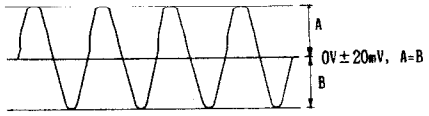
④ Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.
1. Conect an oscilloscope to TP2 (HF), GND.
2. Turn on the power switch.
3. Insert the disc YEDS-18 (YEDS-1) and press the ▷PLAY button.
4. Adjust SFR103 to make clear and maximize the waveform amplitude on the osciloscope. For clearer waveform, diamond shapes (◇) can be distinguished in the center of the waveform.

RF signal waveform



Recheck the HF Vp-p after HF Vp-p and focus bias adjustments.

⑤ Tracking Balance Adjustment
1. Connect an oscilloscope to TP3 (TE), GND.
2. Connect pin (TE) of SFR104 on the SERVO circuit board to ground.
3. Turn on the power switch.
4. Insert the disc YEDS-18 (YEDS-1) and press the ▷PLAY button.
5. Adjust SFR102 (TB) so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



VOLT/DIV:0.5V
TIME/DIV:2msec

⑥ DC Offset Adjustment
(When no distortion meter is available, be careful not to make the DC offset adjustment.)
1. Connect a harmonic distortion meter to OUTPUT (FIXED) J101-1 (L CH) and J101-2 (R CH).
2. Insert a sine wave signal test disk (1kHz, 0dB) and press the ▷PLAY button.
3. Adjust SFR505 (L CH) and SFR506 (R CH) so that the distortion factor is minimized.

⑦ Bipolar Offset Adjustment
(When no distortion meter is available, be careful not to make the bipolar offset adjustment.)
1. Remove the solder in Initializing 1.
2. Connect a harmonic distortion meter to OUTPUT (FIXED) J101-1 (J101-2).
3. Insert a sine wave signal test disk (1kHz, 0dB) and press the ▷ PLAY button.
4. Adjust SFR503 (L CH) and SFR504 (R CH) so that the distortion factor is minimized.

⑧, ⑨ Focus/Tracking Gain Adjustment
A frequency response analyzer is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.
However, as these reciprocate, the adjustment is at the point where both are satisfied.
- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

Symptoms \ Gain	Focus	Tracking
● The time until music starts becomes longer for STOP → PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP → ▷PLAY or automatic selection (⏮ ⏭ buttons pressed.)	–	low
● Disc table opens shortly after STOP → ▷PLAY.	low or high	–
● Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
● More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

– Simple Adjustment –
Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

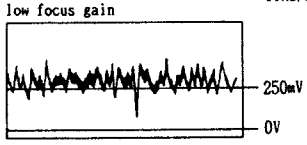
Procefure :
1. Keep the set horizontal.
(If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert the disc YEDS-18 (YEDS-1) and press the ▷PLAY button.
3. Connect oscilloscope to SERVO circuit board TP4 (FE).
4. Adjustment SFR105 so that the waveform is as shown in the figure below. (focus gain adjustment)

VOLT/DIV:100mV
TIME/DIV:2ms

● Incorrest Examples (DC level changes more than on-adjusted waveform)

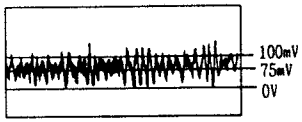
VOLT/DIV:100mV
TIME/DIV:2ms

low focus gain



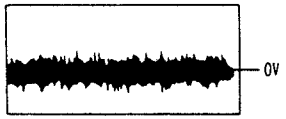
VOLT/DIV:100mV
TIME/DIV:2ms

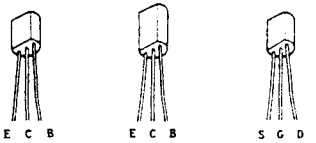
high focus gain



5. Connect oscilloscope to SERVO circuit board TP3 (TE).
6. Adjust SFRI04 so that the waveform is as shown in the figure below. (tracking gain adjustment)

VOLT/DIV:0.5V
TIME/DIV:2mS



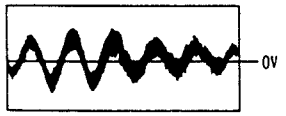


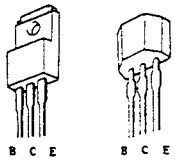
2SA970 2SA683 2SK246
2SA1015 2SC1383
2SC1815
2SC2240
2SC2878

● Incorrect Example (fundamental wave appears)

low tracking gain

VOLT/DIV:0.5V
TIME/DIV:2mS





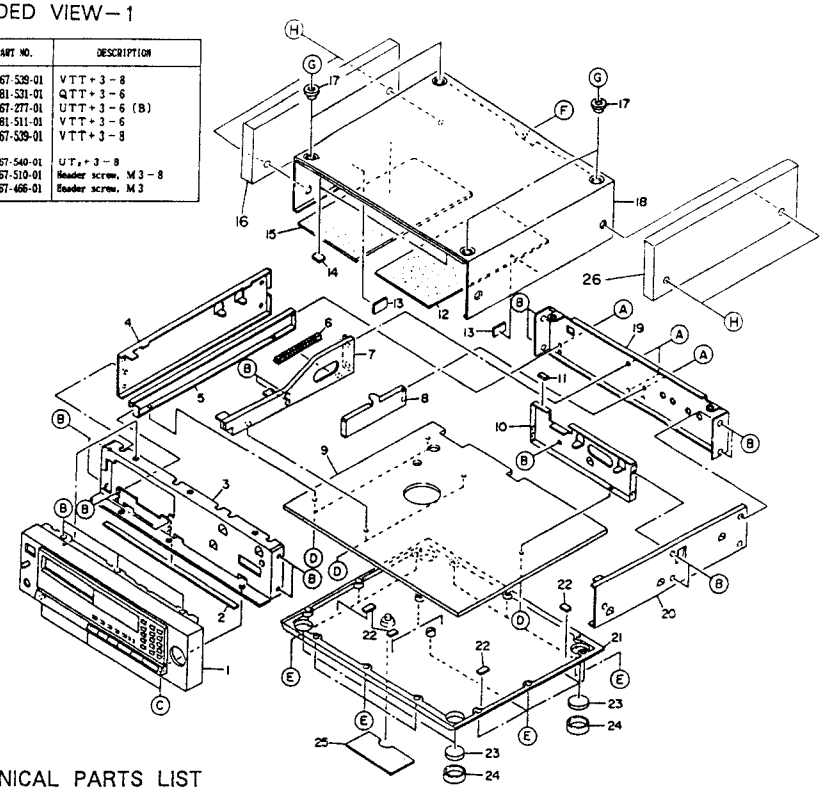
2SB1015 DTA144
2SD1406 DTC144

VOLT/DIV:0.5V
TIME/DIV:2mS

high tracking gain
(higher fundamental wave than for low gain)

EXPLODED VIEW—1

REF. NO.	PART NO.	DESCRIPTION
A	87-067-539-01	VTT+3-8
B	87-081-531-01	QTT+3-6
C	87-067-277-01	UTT+3-6 (B)
D	87-081-511-01	VTT+3-6
E	87-067-539-01	VTT+3-8
F	87-067-540-01	UT$_x$+3-8
G	87-067-510-01	Header screw, M3-8
H	87-067-466-01	Header screw, M3

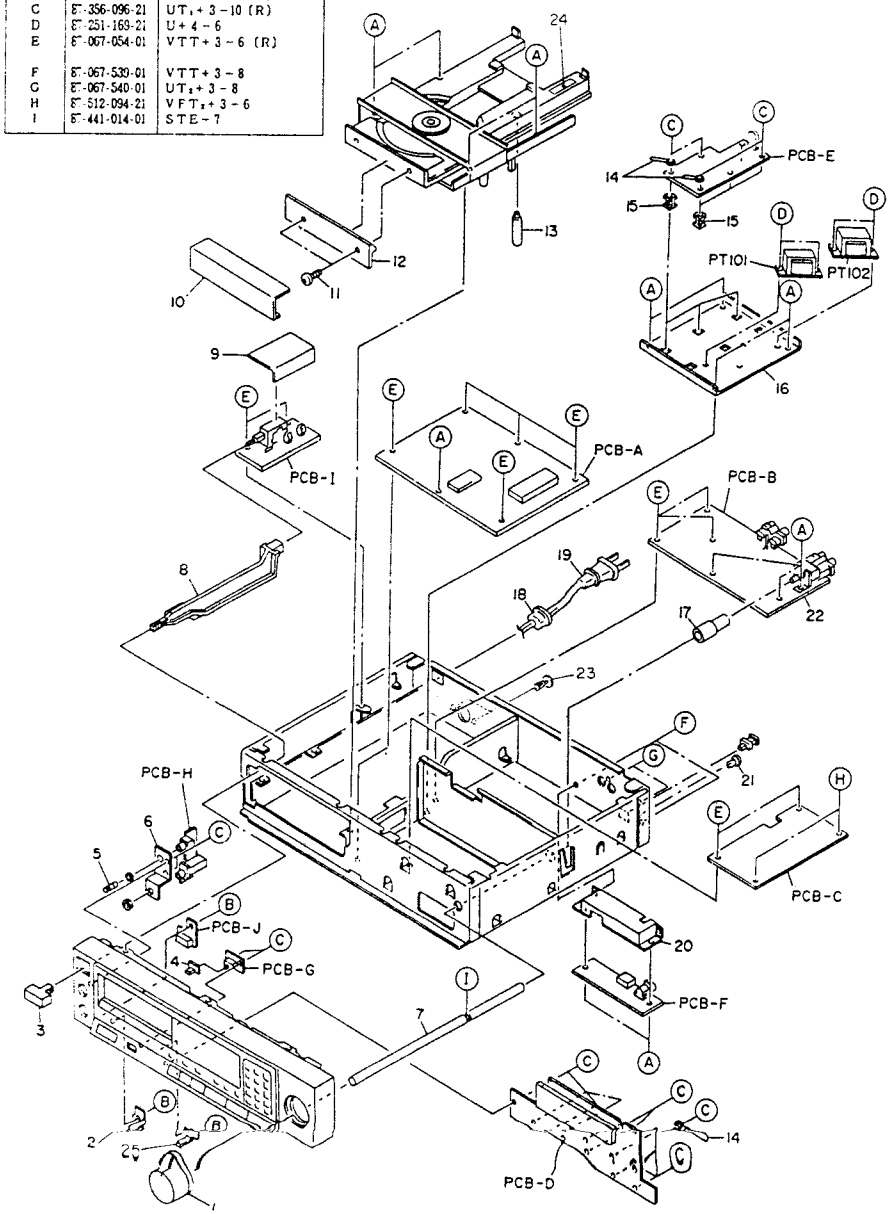


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1-1	★09-057-013-010	CABINET FRONT ASSY	※	1
	1-2	★84-736-228-010	CUSHION, BOTTOM	※	1
	1-3	---	CHASSIS, FRONT		1
	1-4	---	CHASSIS, SIDE L.		1
	1-5	---	CHASSIS, MECHANISM L		1
	1-6	★84-736-232-010	COVER, WIRE	※	1
	1-7	---	CHASSIS, MECHANISM R		1
	1-8	★84-736-209-010	HOLDER, CIRCUIT BOARD	※	1
	1-9	---	CHASSIS, UNDER		1
	1-10	★84-736-208-010	HOLDER, CENTER	※	1
	1-11	★84-736-227-010	DAMPER D	※	1
	1-12	★84-736-225-010	DAMPER B	※	1
	1-13	★84-736-226-010	DAMPER C	※	2
	1-14	★84-736-229-010	HIMERON 20-15-0.5	※	3
	1-15	★84-736-224-010	DAMPER A	※	1
	1-16	★84-736-053-010	SIDE WOOD L ASSY	※	1
	1-17	★84-738-018-010	RING, TOP		1
	1-18	★84-738-029-010	STEEL, CABINET		1
	1-19	★84-736-046-010	PANEL, REAR (H ONLY)	※	1
	1-19	★84-736-043-010	PANEL, REAR (C ONLY)	※	1
	1-19	★84-736-044-010	PANEL, REAR (E ONLY)	※	1
	1-19	★84-736-048-010	PANEL, REAR (K ONLY)	※	1
	1-20	---	CHASSIS, SIDE R		1
	1-21	★84-736-032-010	COVER, BOTTOM	※	1
	1-22	★84-736-231-010	DAMPER E	※	6
	1-23	★84-736-034-010	INSULATOR	※	1
	1-24	★84-736-033-010	RING, FOOT	※	1
	1-25	---	LABEL 2, CAUTION		1
	1-26	★84-736-055-010	SIDE WOOD R ASSY	※	1

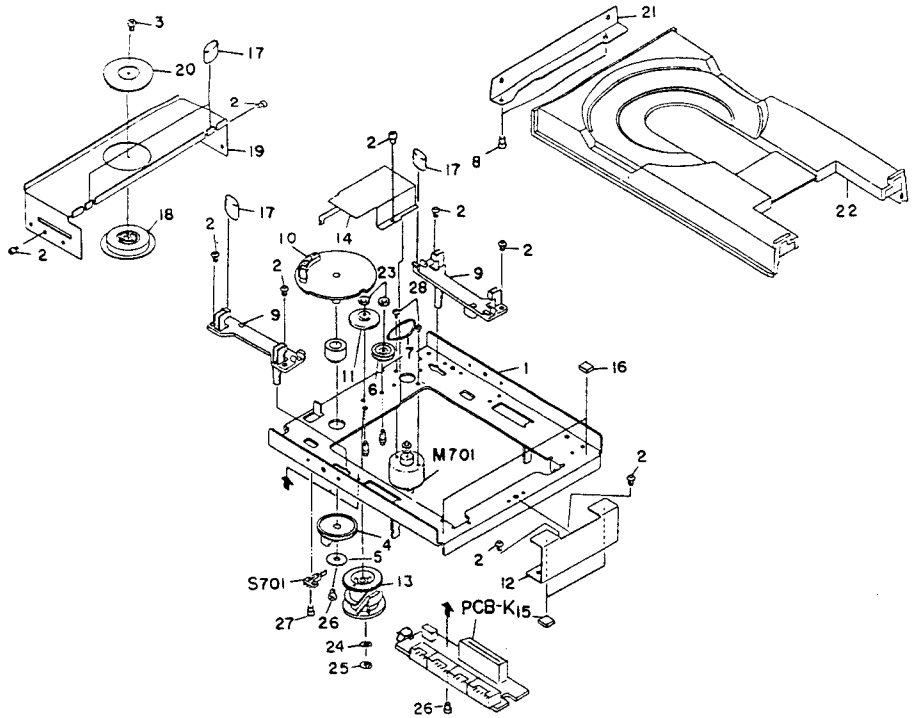
EXPLODED VIEW－2

REF.NO.	PART NO.	DESCRIPTION
A	87-081-511-01	VTT＋3－6
B	87-346-095-21	UT$_2$＋3－8 (R)
C	87-356-096-21	UT$_1$＋3－10 (R)
D	87-251-169-21	U＋4－6
E	87-067-054-01	VTT＋3－6 (R)
F	87-067-539-01	VTT＋3－8
G	87-067-540-01	UT$_2$＋3－8
H	87-512-094-21	VFT$_2$＋3－6
I	87-441-014-01	STE－7



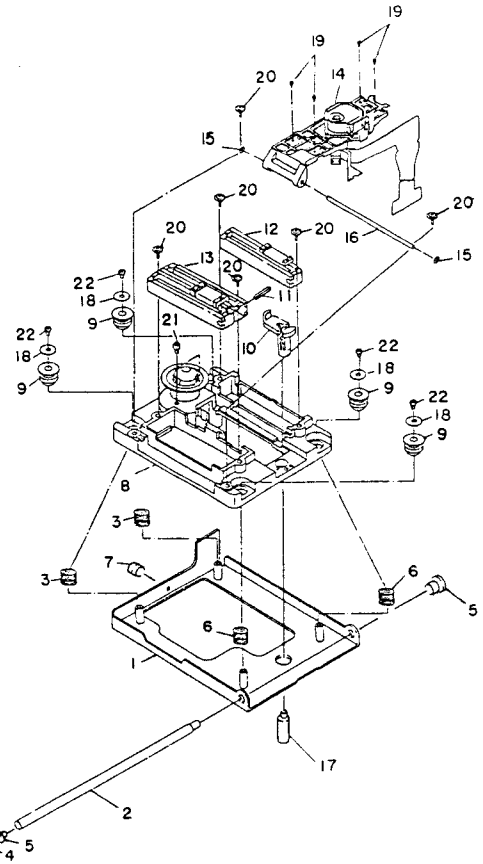
PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	2-1	★84-736-010-010	KNOB VOLUME ASSY	※	1
	2-2	★84-736-236-010	EARTH PLATE C	※	1
	2-3	★84-721-023-010	PUSH-BUTTON, POWER		1
	2-4	★84-732-010-010	KNOB, SLIDE TIME		1
	2-5	★84-738-015-110	KNOB, ROTARY		1
	2-6	★84-736-216-010	HOLDER, TIMER	※	1
	2-7	★84-736-217-010	SHAFT, VOLUME	※	1
	2-8	★84-711-234-210	ROD		1
	2-9	---	INSULATION SHEET		1
	2-10	---	LABEL CAUTION CD		1
	2-11	★82-226-051-010	SCREW, DECORATIVE BOX		2
	2-12	★84-736-005-010	PANEL, TRY	※	1
	2-13	★84-736-223-010	JOINT, P. U STOPPER	※	1
	2-14	---	WIRE BINDER		3
	2-15	★87-064-106-010	HOLDER, CIRCUIT BOARD		6
	2-16	---	CHASSIS, TRANSFORMER		1
	2-17	★84-736-218-010	JOINT, VOLUME	※	1
	2-18	★87-085-184-010	CORD BUSHING (H ONLY)		1
	2-18	★87-085-189-010	CORD BUSHING (C ONLY)		1
	2-18	★87-085-185-010	CORD BUSHING (E, K ONLY)		1
	2-19	★87-034-732-010	AC CORD ASSY (H ONLY)		1
	2-19	★87-034-731-010	AC CORD ASSY (C ONLY)		1
	2-19	★87-034-736-010	AC CORD ASSY (E ONLY)		1
	2-19	★87-034-734-010	AC CORD ASSY (K ONLY)		1
	2-20	★84-736-212-010	HOLDER, DIGITAL	※	1
	2-21	★87-084-063-010	NYLON RIVET φ3－5.5		1
	2-22	★84-736-215-010	HOLDER, VOLUME	※	1
	2-23	★87-084-098-010	NYLON, RIVET 3－5.5 (H ONLY)		2
	2-24	---	LABEL CAUTION TRIANG (E, K ONLY)		1
	2-25	★84-736-235-010	EARTH PLATE B	※	1

EXPLODED VIEW－3



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★9X-264-240-630	MAIN CHASSIS ASSY		1
	3-2	★97-685-862-090	SCREW +BVTT 2.6×6		9
	3-3	★97-685-532-190	TAPPING +B 2.6×5 TYPE2		1
	3-4	92-642-416-010	CAM DRIVE GEAR		1
	3-5	★93-464-123-110	WASHER 2.7φ×0.5		1
	3-6	★94-913-731-010	ROADING PULLEY		1
	3-7	93-653-387-010	LM BELT		1
	3-8	★97-685-647-290	TAPPING +BV 3×10 TYPE2		2
	3-9	★92-642-418-020	TRAY HOLDER		2
	3-10	92-642-417-020	DRIVE GEAR		1
	3-11	92-642-107-010	RELAY GEAR		1
	3-12	★92-642-437-010	TRAY GUIDE		1
	3-13	92-642-422-020	CONTROL CAM		1
	3-14	★92-642-421-020	GEAR COVER		1
	3-15	★92-642-438-010	CUSHION (T)		2
	3-16	★93-565-343-010	CUSHION (F)		2
	3-17	★93-652-612-210	CUSHION (B)		4
	3-18	★92-642-432-010	CHAKING PULLEY		1
	3-19	★92-642-433-020	CHAKING CHASSIS		1
	3-20	★9A-491-013-480	MAGNET ASSY		1
	3-21	★92-642-419-020	PANEL PLATE		1
	3-22	92-642-434-020	TRAY		1
	3-23	★93-558-708-210	WASHER		2
	3-24	★93-701-441-210	POLY WASHER 4φ		1
	3-25	★97-624-106-040	E-RING		1
	3-26	★97-685-534-190	TAPPING +B 2.6×8 TYPE2		2
	3-27	★97-685-104-190	TAPPING +P 2×6 TYPE2		1
	3-28	★97-621-775-100	+B 2.6×4		2

EXPLODED VIEW－4



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	4-1	★9X-264-240-520	SUB CHASSIS ASSY		1
	4-2	★92-642-420-010	GUIDE SHAFT		1
	4-3	★92-642-402-020	SPRING, COMPRESSION (A)		2
	4-4	★97-624-190-110	E-RING, CS CAP		1
	4-5	★92-642-423-010	BUSH		2
	4-6	★92-642-401-020	SPRING, COMPRESSION (B)		2
	4-7	★92-642-104-010	ROLLER		1
	4-8	9X-264-240-810	MECHANISM CHASSIS ASSY (WITH TURNTABLE, MOTOR)		1
	4-9	★92-642-424-010	INSULATOR		4
	4-10	★92-642-414-010	LOCK STOPPER		1
	4-11	★92-642-411-010	YORK SPRING		1
	4-12	9A-491-013-7A0	LINEAR MOTOR ASSY (DETECT)		1
	4-13	9A-491-013-880	LINEAR MOTOR ASSY (DRIVE)		1
	4-14	98-848-047-010	PICK UP (KSS-151A)		1
	4-15	★92-642-436-020	SPRING (DISH)		2
	4-16	★92-642-410-010	GUIDE SHAFT		1
	4-17	84-733-216-010	JOINT PU 5V		1
	4-18	★93-464-123-110	WASHER 2.7φ×0.5		4
	4-19	★93-318-203-610	TAPPING B 1.7×4		4
	4-20	★93-703-135-210	TAPPING M 3×8		6
	4-21	★97-621-255-380	+P 2×5		2
	4-22	★97-621-775-100	+B 2.6×4		4
	4-23	---	TUBE 5 φ-4		1